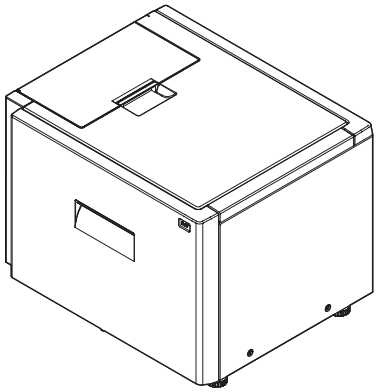
SHARP SERVICE MANUAL

CODE: 00ZMXLCX3/S1E



DIGITAL FULL COLOR MULTIFUNCTIONAL SYSTEM OPTION LARGE CAPACITY TRAY

MODEL MX-LCX3

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* For unpacking and installation, refer to the installation manual([3]).

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Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

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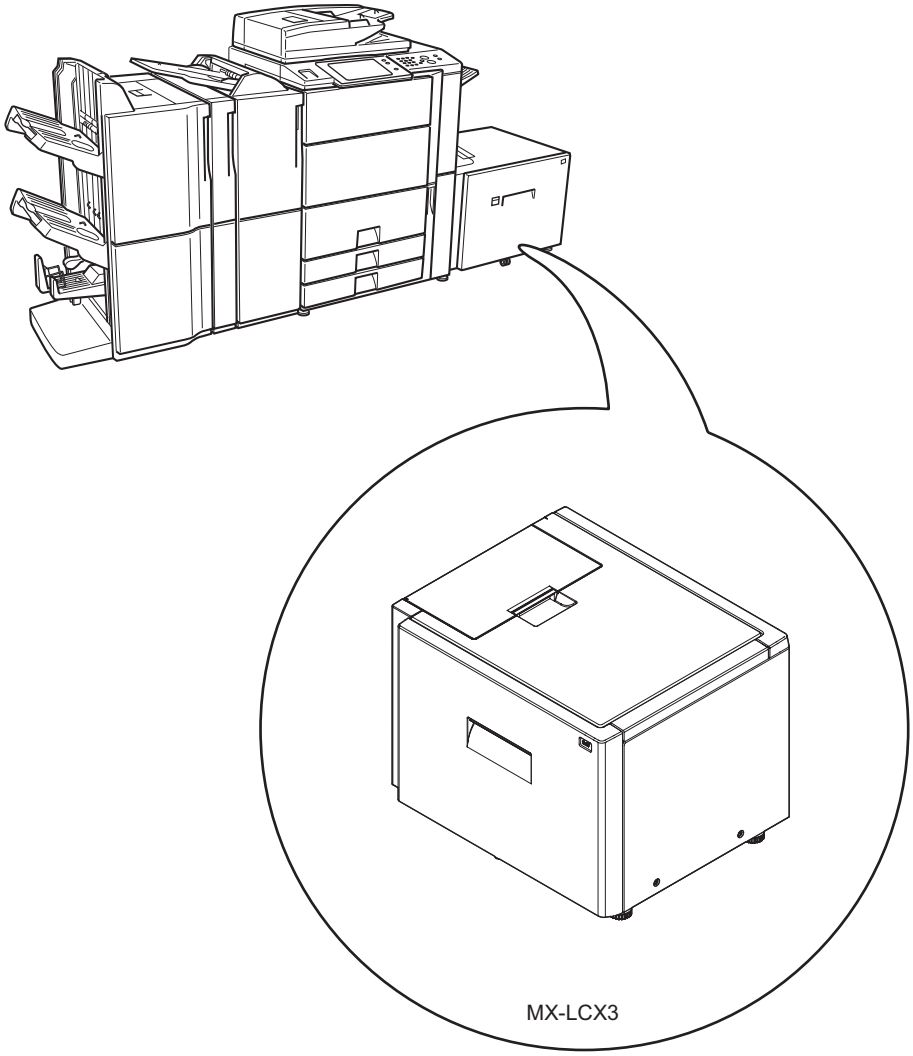
[1] PRODUCT OUTLINE

This model is a large capacity paper feed tray installed to the main unit.
It stores 3,000 sheets, eliminating troublesome paper supply.



MX-LCX3

[2] SPECIFICATIONS

Model			Large capacity tray
Transport reference			Center reference
Heat reserving heater			Domestic: Heater kit support Overseas: Service parts support
Paper capacity	Domestic	Normal paper(64g/m^2 ,17 lbs bond)	3500 sheets
	Overseas	Normal paper(80g/m^2 ,21 lbs bond)	3000 sheets
Paper size/type/weight			Refer to Table 1
Paper size detection			Not provided (Manually setting from the control panel of the main unit)
Paper type setting			Refer to Table 2
Paper size change system		Changeover by user	Yes (Changeover by manager is allowed)
		Changeover by service man (Adjustment of guide and entry of size)	No
Factory setting of paper size		Domestic	A3
		Overseas, Inch series	11x17
		Overseas, AB series	A3
Remaining paper detection			Paper empty and 6 steps (100% ,83.3% ,66.7% ,50% ,33.3% ,16.7% ,Paper empty)
Tray lift time		Up	max. 30 sec.
		Down	max. 15sec.
Troubleshooting of paper jam			Can be corrected without separating the unit.
Reliability			MCBJ:Conforms to the main unit MCBF:Conforms to the main unit
Life			Conforms to the main unit
Power source			Supplied from the main unit
Power consumption			Normal operation:50.4W Lift up:40.8W
Dimensions(W×D×H)			670×570×525mm, 26 3/8 × 22 7/16 × 20 21/32 inch
Occupying area(W×D)			670×570mm, 26 3/8 × 22 7/16 inch * The rear cabin motor restrictor (10mm) is not included.
Weight			Approx. 50kg, 110.1 lbs
Installation/Maintenance			Implemented by service man
Maintenance parts			Paper feed roller
Optional detection			Automatic detection
Bundled item			Parts for installation

Table 1:Paper size, type, weight

			AB Series	Inch
Paper size		A3W	Yes	Yes
		A3	Yes	Yes
		B4	Yes	Yes
		A4	Yes	Yes
		A4R	Yes	Yes
		B5	Yes	Yes
		B5R	No	No
		A5R	No	No
		12×18	Yes	Yes
		11×17	Yes	Yes
		8.5×14	Yes	Yes
		8.5×13	Yes	Yes
		8.5×11	Yes	Yes
		8.5×11R	Yes	Yes
		7.25×10.5R	No	No
		5.5×8.5R	No	No
		8K *	No	No
		16K *	No	No
		16KR	No	No
		Postcard	No	No
		Envelope	No	No
		Special	No	No
Kind/weight of applicable paper	Thin paper	55-59g/m^2 15-16- lbs bond	No	
	Normal paper	60-105g/m^2 16-28 lbs bond	Yes	
	Cardboard 1(including gloss paper)	106-209g/m^2 28+-56- lbs bond	Yes	
	Cardboard 2	210-256g/m^2 56-68 lbs bond	No	
	Envelope	75-90g/m^2 20-24 lbs bond	No	
	OHP paper		No	
	Label paper		No	
	Tab paper		No	

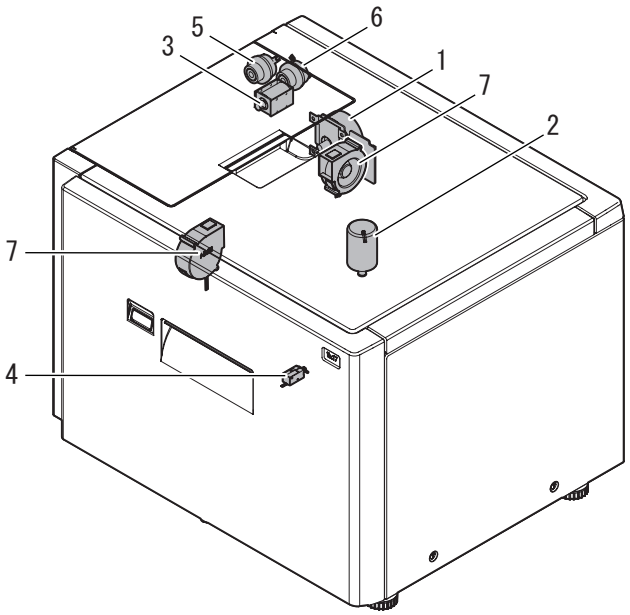
* : Available for products for China only.

Table2:Paper type setting

Paper type	Normal paper	Yes
	Printed paper	Yes
	Recycled paper	Yes
	Letter head	Yes
	Perforated paper	Yes
	Color paper	Yes
	Cardboard 1	Yes
	Cardboard 2	No
	Thin paper	No
	Label paper	No
	OHP	No
	Tab paper	No
	Envelope	No
	Use type 1 to 7	Yes

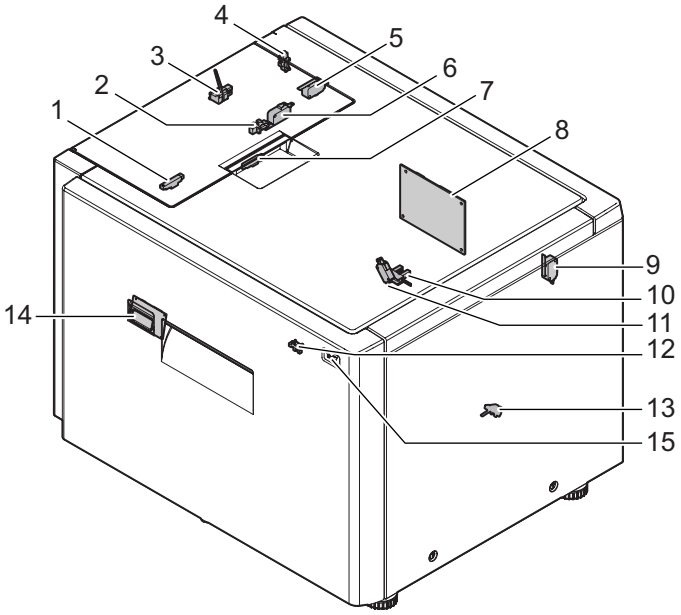
[4] EXTERNAL VIEWS AND INTERNAL STRUCTURES

1. Motor, clutch, solenoid



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1	LPFM	LPFM	Transport motor	Brushless motor	Drives the paper feed, and the paper transport section.	CN-G 5pin → Motor rotation clock 4pin → Sync signal: Normal HIGH 3pin → Enable signal: LOW when rotating
2	LLM	LLM	Lift motor	Brush motor	Lifts or lowers the paper feed table.	CN-B Lifting: 10pin "24V", 15pin "L" Lowering: 10pin "L", 15pin "24V"
3	LPFS	LPFS	Paper feed solenoid		Presses the paper pickup roller onto paper.	CN-E 8pin ON: "L" OFF: "24V"
4	LTLS	LTLS	Tray lock solenoid		Controls ON/OFF of the tray lock.	CN-D Lock: "L" ("24V" after 0.5sec) Release: "L" ("24V" after 0.5sec)
5	LTRC	LTRC	Transport clutch		Controls ON/OFF of the transport roller.	CN-F 15pin ON: "L" OFF: "24V"
6	LPFC	LPFC	Paper feed clutch		Controls ON/OFF of the paper feed roller.	CN-F 11pin ON: "L" OFF: "24V"
7	LFAN	LFAN	Separation assist fan	Brushless motor	Assists feeding of paper.	CN-D 15, 16pin ON: "L" OFF: "5V"

2. PWB, sensor, switch, heater



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1	LPUD	LPUD	LCC paper front surface sensor		Detects paper front surface position	CN-C 8pin Paper detected: "L" Paper not detected: "H"
2	LUD	LUD	Upper limit sensor		Detects the paper upper limit position.	CN-E 5pin Upper limit: "H" Other than Upper limit: "L"
3	LPFD	LPFD	Transport sensor		Detects paper transport.	CN-E 11pin Paper detected: "L" Paper not detected: "H"
4	LTOD	LTOD	The main unit connection sensor		Detects connection to the main unit.	CN-F 19pin Connected: "L" Not connected: "H"
5	LDSW	LDSW	Upper open/close switch		Detects open/close of the upper door.	CN-F 4pin 6pin Open: "L" Close: "24V"
6	LLSW	LLSW	Upper limit switch		Protects the paper feed unit from breakage due to lifting the tray too much.	CN-F 7pin Normal: "24V" Detection: "L"
7	LPED	LPED	Paper presence/empty sensor		Detects paper presence/empty on the paper tray.	CN-E 2pin Paper present: "L" Paper empty: "H"
8	A3-LCC PWB	—	A3-LCC PWB unit		Controls and drives the LCC.	
9	LCSW	LCSW	Cassette detection switch		The tray insertion is detected.	CN-B 7pin Cassette insertion: "24V" Cassette puling out: "L"
10	LRE	LRE	Lift motor encoder		The lift motor rotation is detected.	CN-C 4pin Pulse
11	LWRSW	LWRSW	LCC reverse-winding detection switch		Detects lift motor reverse-winding	CN-B 14pin Normal: "24V" Detection: "L"
12	LTLD	LTLD	Tray lock sensor		Detects the tray lock	CN-C 7pin Lock: "H" Release: "L"
13	LDD	LDD	Lower limit sensor		The lower limit of the tray is detected.	CN-C 3pin Lower limit: "H" Other than Lower limit: "L"
14	DOWN SW PWB	—	Lowering SW PWB unit		Shifts the tray to the paper supply position.	
15	LTLLED	LTLLED	Tray LED		The tray state is displayed with LED.	

[5] OPERATIONAL DESCRIPTION

1. Lift operation

A. Lifting by insertion of the tray

When insertion of the tray is detected, the tray is locked by the tray lock solenoid so that the tray cannot be pulled out.

When tray lock is settled by turning ON the tray lock sensor (LTLD), the lift motor is turned ON to lift the tray.

When the tray is lifted, the tray LED blinks and stops at the paper feed position (upper limit) by turning ON the upper limit sensor (LUD).

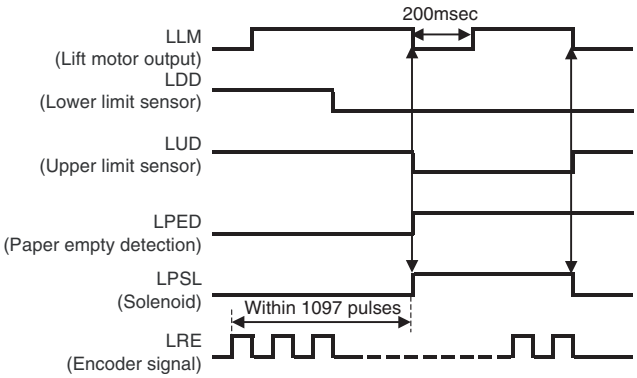
When the tray stops at the paper feed position (upper limit), the tray LED turns on.

When the paper empty sensor (LPED) turns ON within 1097 pulses of the encoder signal from start of the tray lifting, the lift motor is turned OFF to stop the tray, and the paper feed solenoid (LPFS) is turned ON to lower the pick roller.

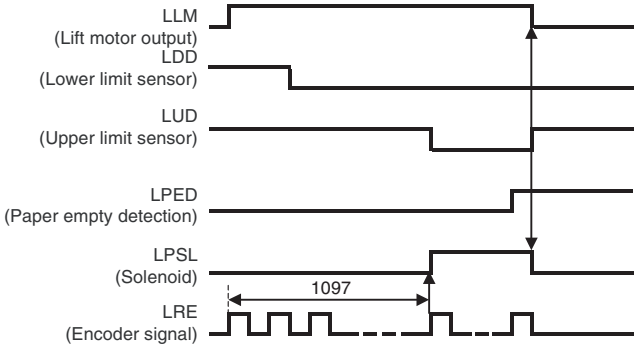
After that, the lift motor is turned ON again to lift the tray and stop it at the upper limit sensor (LUD) ON position.

When the paper empty sensor (LPED) does not turn ON within 1097 pulses, the paper feed solenoid (LPFS) is turned ON with the lift motor ON to lower the pick roller. The lift motor is stopped at the upper limit sensor (LUD) ON position and the paper feed solenoid is turned OFF.

Lifting (When LPED turns ON within 1097 pulses during lifting)



Lifting (When LPED does not turn ON within 1097 pulses during lifting)



B. Lowering operation by paper empty detection or pressing the tray SW

When the paper empty sensor (LPED) turns OFF with the tray at the paper feed position (upper limit) or when the tray SW (LTLSW) is pressed, the tray is lowered by 542 pulses of the encoder signal and stopped at the paper supply position.

When the lower limit sensor (LDD) turns ON before lowering the tray by 542 pulses of the encoder signal, the lift motor is turned OFF to stop the tray.

When the tray is moving down, the tray LED blinks. When the tray is stopped at the paper supply position, the tray LED turns OFF.

When the tray is stopped at the paper supply position, the tray lock solenoid releases the lock so that the tray can be pulled out.

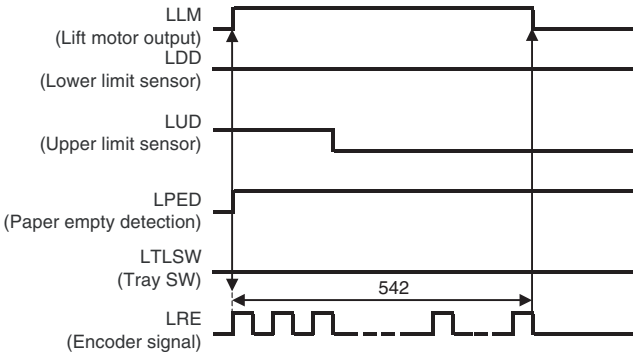
When the tray is lowered with the paper empty sensor (LPED) OFF, the tray remains at the paper supply position and the tray lock is kept released.

When the tray is lowered by pressing the tray SW (LTLSW), if the tray is not pulled out from the paper supply position for 90sec, the tray lock solenoid locks the tray. When the tray is locked securely, the lift motor is turned ON to lift the tray.

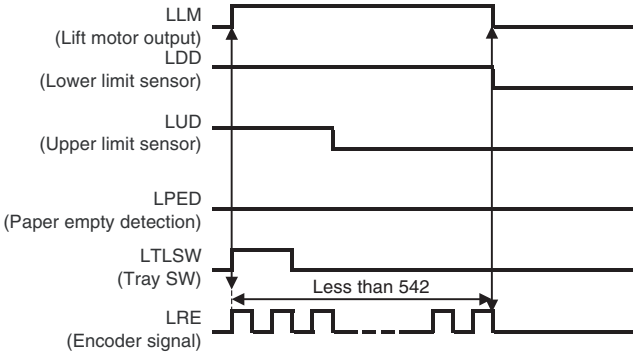
When the tray is lifting, the tray LED blinks. When the upper limit sensor (LUD) is turned ON, the tray stops at the paper feed position (upper limit).

When the tray stop at the paper feed position (upper limit), the tray LED turns ON.

Lowering operation (when paper empty is detected)



Lowering operation (when tray SW is pressed)



C. Lowering operation by paper supply

If the tray is pulled out when it is at the paper supply position, the tray lock solenoid keep the lock released.

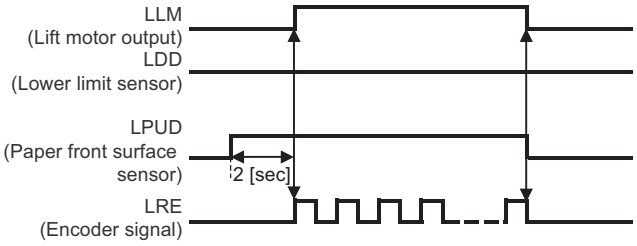
When the tray is pulled out, the tray LED turns OFF.

When the paper front surface sensor (LPUD) is turned ON for 2sec while the tray is pulled out, the lift motor is turned ON to lower the tray.

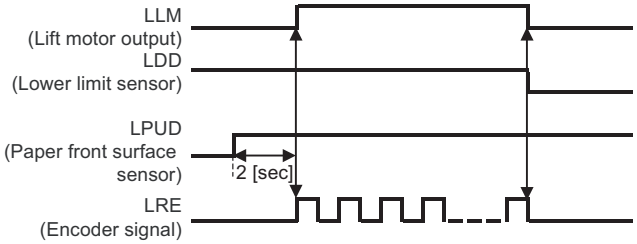
When the paper front surface sensor (LPUD) is turned OFF while the tray is lowered, the lift motor is turned OFF to stop the tray.

When the lower limit sensor (LDD) is turned ON while the tray is lowered, the lift motor is turned OFF to stop the tray regardless of the state of the paper front surface sensor (LPUD).

Lowering operation (when paper is supplied or when the paper front surface sensor is turned ON)



Lowering operation (when paper is supplied or when the lower limit sensor is turned ON)



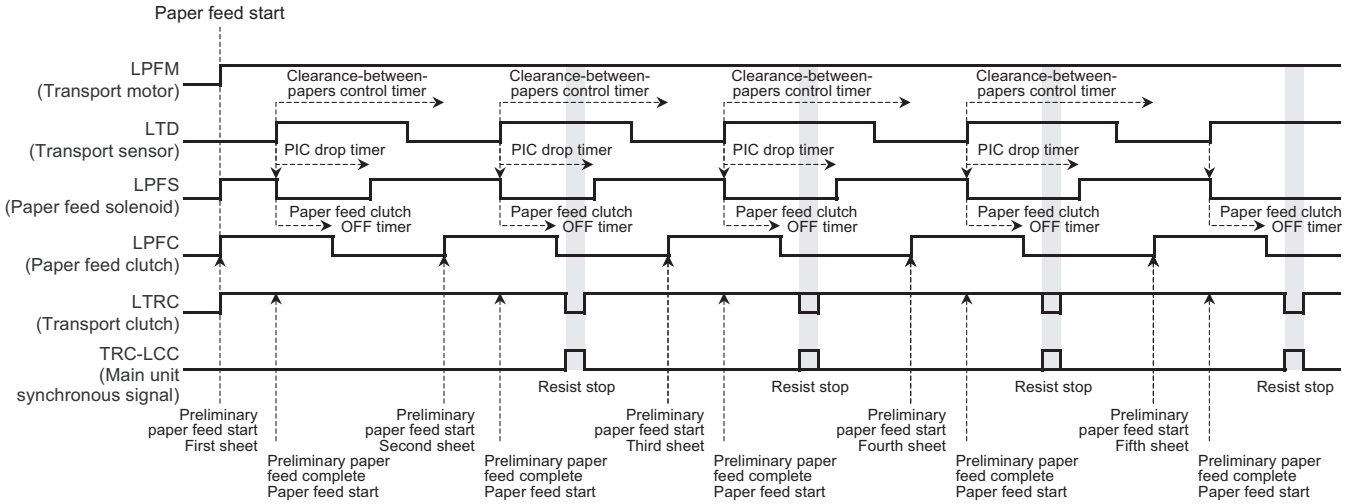
2. Paper feed operation

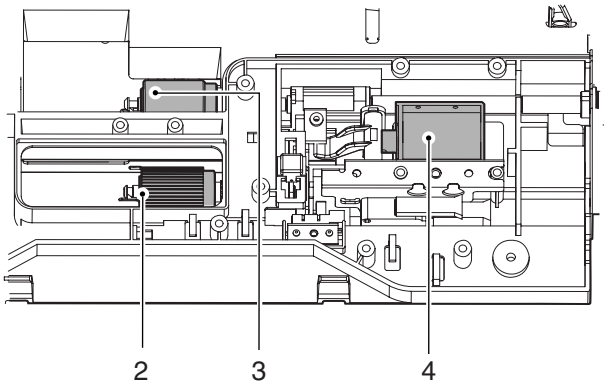
When the tray is stationary at the paper feed position (upper limit sensor: LUD ON position) and there is paper on the tray, paper feed operation can be performed.

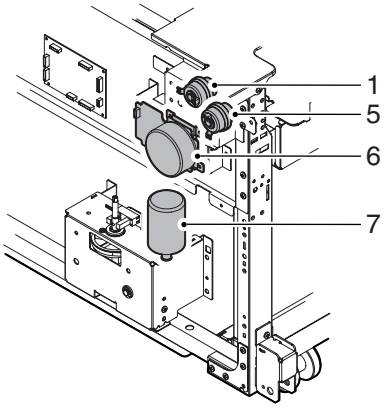
Paper feed operation is performed by the transport motor (LPFM), the transport clutch (LTRC), the paper feed clutch (LPFC), and the paper feed solenoid (LPFS) at the following timing.

When the transport clutch (LTRC) is turned ON with the transport motor (LPFM) ON (rotating), the transport roller rotates. When the paper feed clutch (LPFC) is turned on under this state, the paper feed roller and the take-up roller rotate. When the paper feed solenoid (LPFS) is turned ON, the take-up roller is pushed down to press paper.

Paper feed time chart







1	Paper feed roller clutch
2	Take-up roller
3	Paper feed roller
4	Paper feed solenoid
5	Transport clutch
6	Transport motor
7	Lift-up motor

3. Paper empty detection

When the tray lifts and stops at the paper feed position and during paper feed operation, paper presence/empty is detected by the paper presence/empty sensor (LPED).

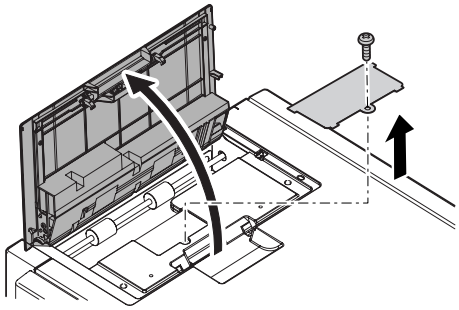
When paper empty is detected in the tray during paper feeding, paper feeding is stopped.

[6] DISASSEMBLY AND ASSEMBLY

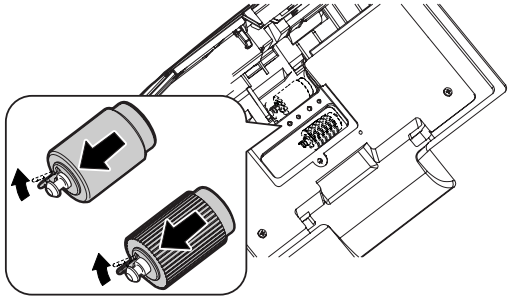
1. Maintenance parts replacement procedures

A. Paper feed roller

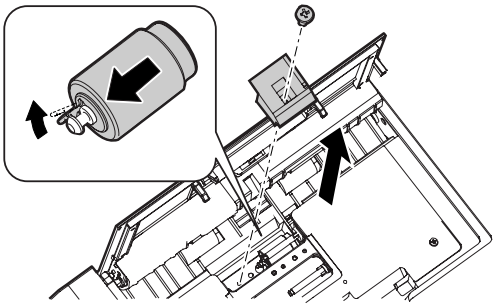
1) Pull the lever, and open the upper cover.
2) Remove the screw, and remove the sheet.



3) Remove the pawl, and remove the pickup roller and the paper feed roller.



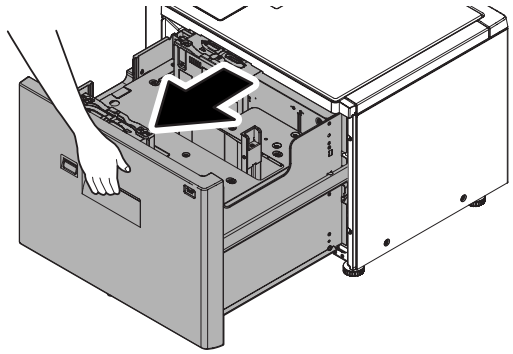
4) Loosen the screw, and remove the paper guide block.
5) Remove the pawl, and remove the reverse roller.



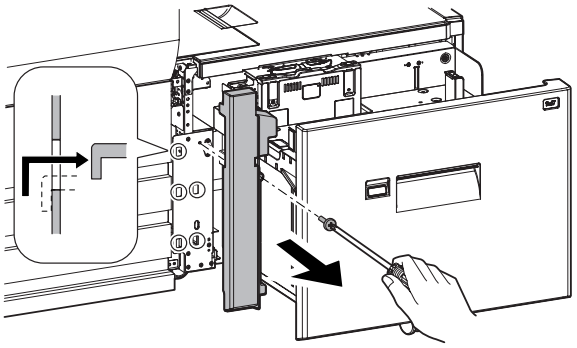
2. Each unit removal

A. Paper feed unit

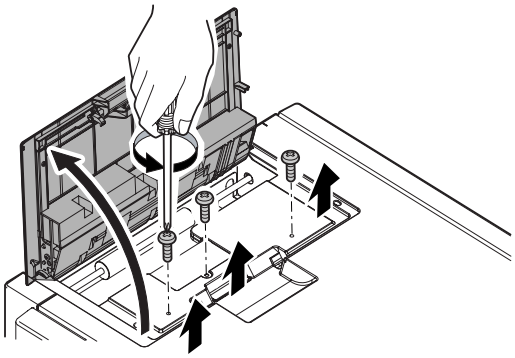
1) Pull out the tray.



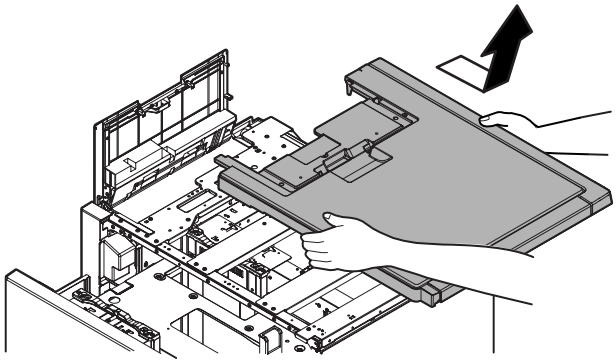
2) Remove the screw, and remove the left front cabinet.



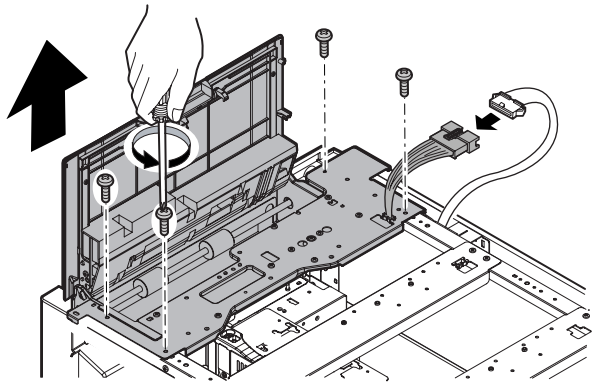
3) Open the upper cover, and remove the screws.



4) Remove the upper cabinet.

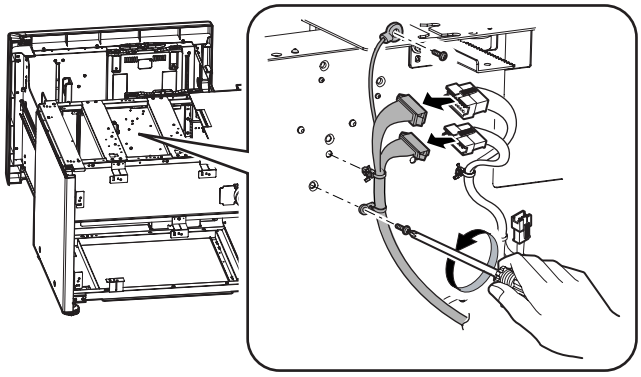


5) Disconnect the connectors.
6) Remove the screws, and remove the paper feed unit.

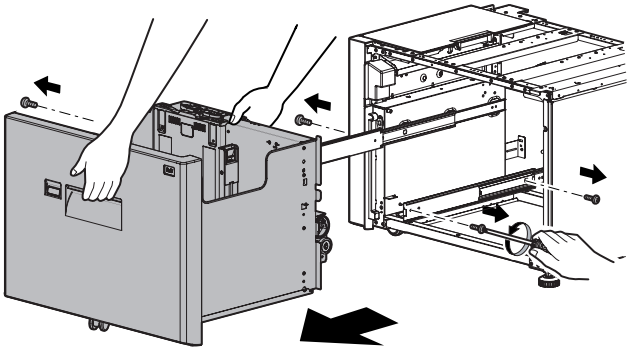


B. Paper feed tray

1) Pull out the tray.
2) Remove the upper cabinet. (Refer to "A. Paper feed unit")
3) Remove the left front cabinet. (Refer to "A. Paper feed unit")
4) Remove the harness.

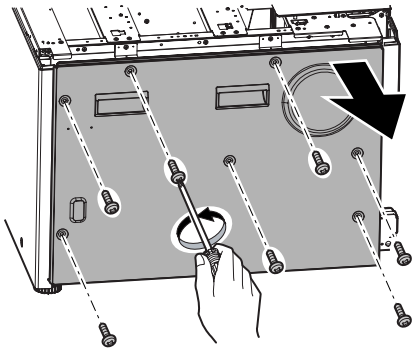


5) Remove the screws from the left and right rail sections, and remove the tray unit from the rail.

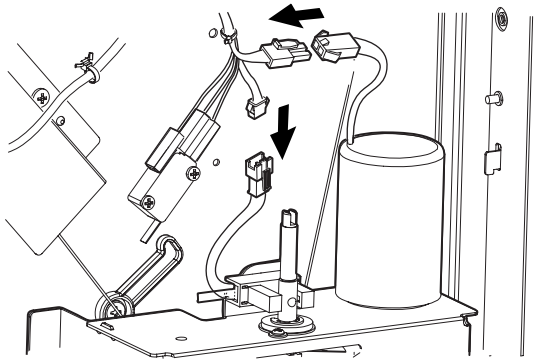


C. Lift drive unit

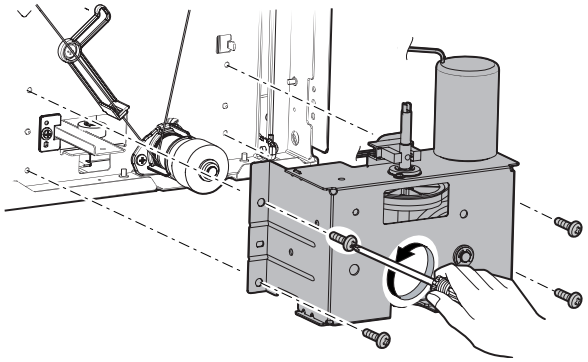
1) Check that there is no paper, and lower the paper feed table to the lower limit with the main unit simulation mode.
2) Remove the screws, and remove the rear cabinet.



3) Remove the connectors.



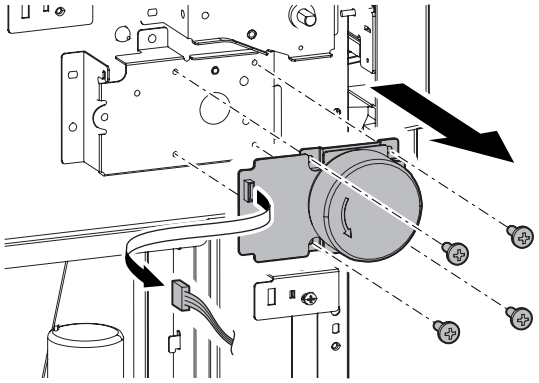
4) Remove the screws, and remove the lift drive unit.



3. Major parts removal

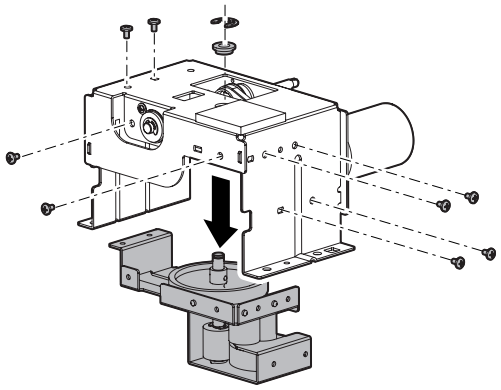
A. Motor (Main)

1) Remove the rear cabinet. (Refer to "2. Each unit removal")
2) Disconnect the connector.
3) Remove the screws, and remove the motor.

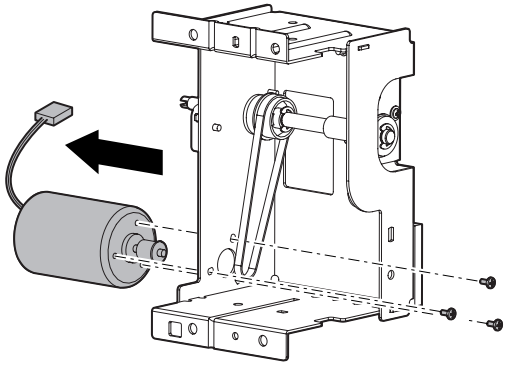


B. Lift motor

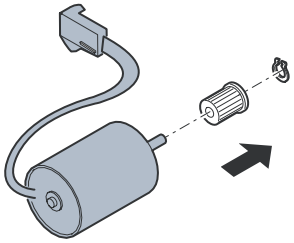
1) Remove the lift drive unit. (Refer to "2. Each unit removal")
2) Remove the screws, the E-ring, the bearing, and remove the gear unit.



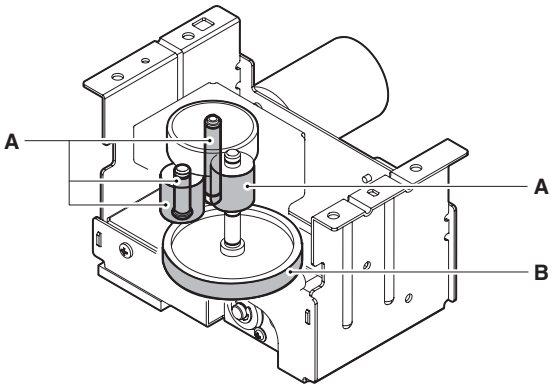
3) Remove the screws, and remove the lift motor.



4) Remove the ring, and remove the pulley.

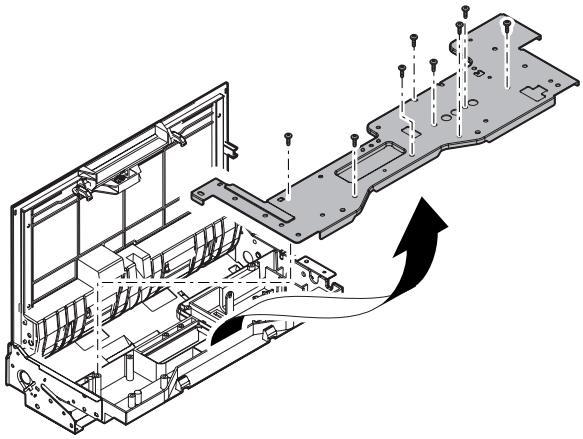


* **Applying grease at maintenance**
A: Apply MOLYKOTE (BR-2 PLUS)
B: Apply FLOIL (G313S)

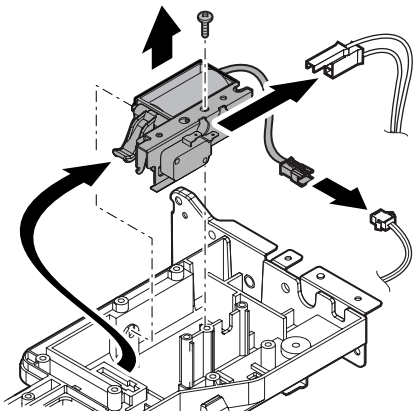


C. Paper feed solenoid

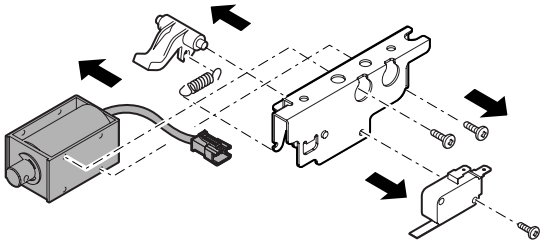
1) Remove the paper feed unit. (Refer to "2. Each unit removal")
2) Remove the cover.



3) Remove the screw, and remove the unit.
Disconnect the connector.

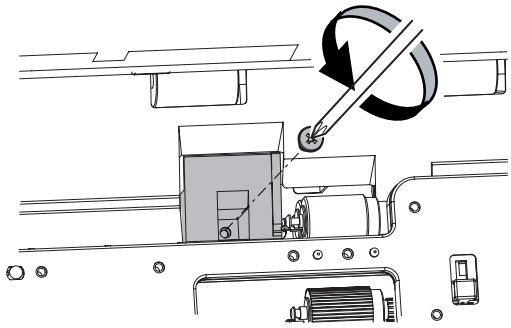


4) Remove the screws, and remove the solenoid.

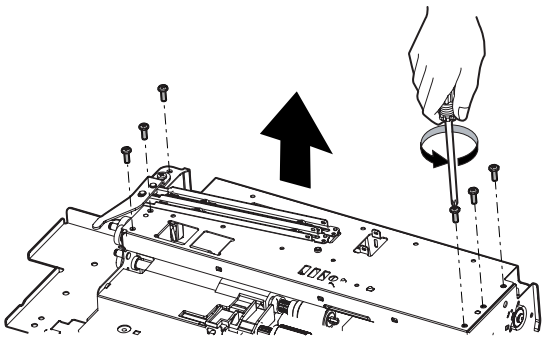


D. Torque limiter

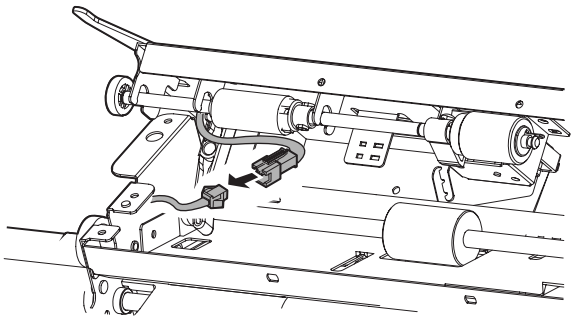
1) Remove the paper feed unit. (Refer to "2. Each unit removal")
2) Remove the screw, and remove the paper guide block.



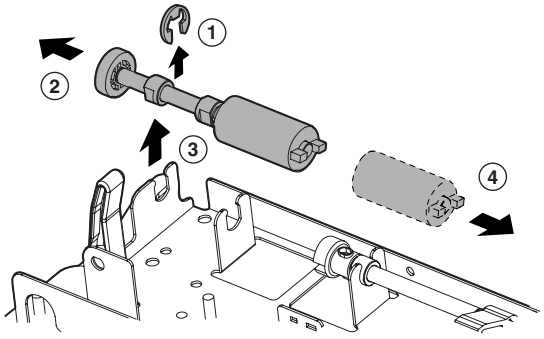
3) Remove the screws, and remove the rear cover.



4) Disconnect the connector.

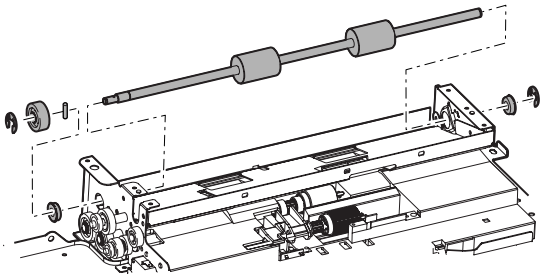


5) Remove the E-ring, and remove the torque limiter.



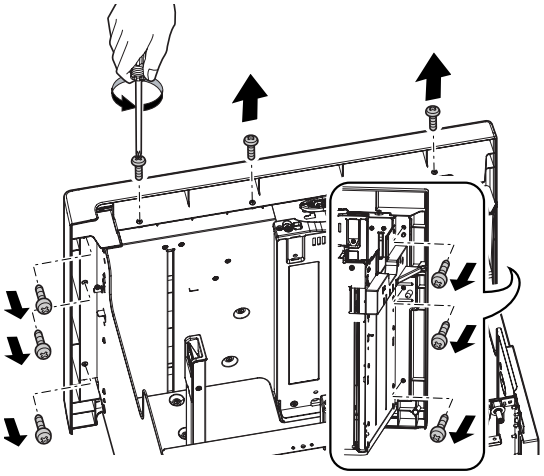
E. Transport roller

1) Remove the paper feed unit. (Refer to "2. Each unit removal")
2) Loosen the screws, and remove the paper guide block.
3) Remove the rear cover, and disconnect the connector. (Refer to "D. Torque limiter")
4) Remove the screw and the E-ring, and remove the parts.
   Remove the transport roller.

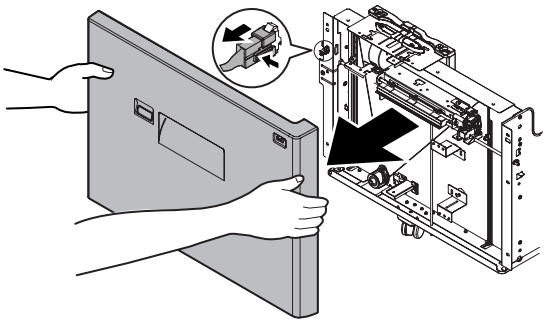


F. Handling solenoid

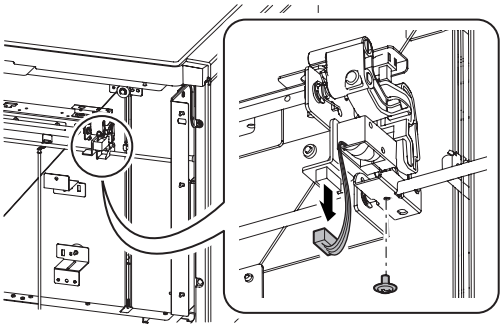
1) Check that there is no paper, and lower the paper feed table to the lower limit with the main unit simulation mode.
2) Pull out the tray.
3) Remove the screws.



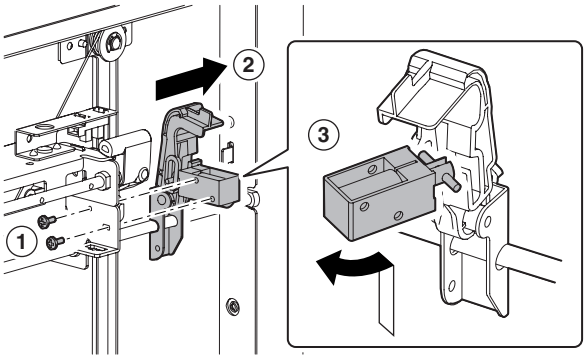
4) Remove the front cabinet, and disconnect the connector.



5) Remove the connector and the screw.

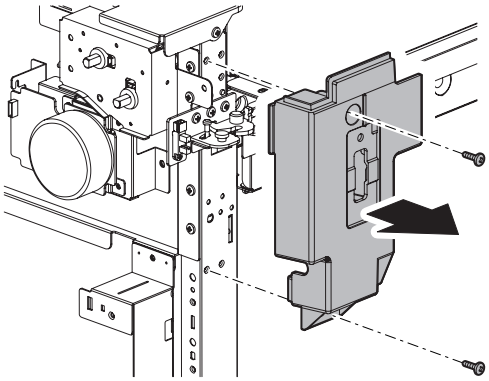


6) Remove the screws, and remove the solenoid.

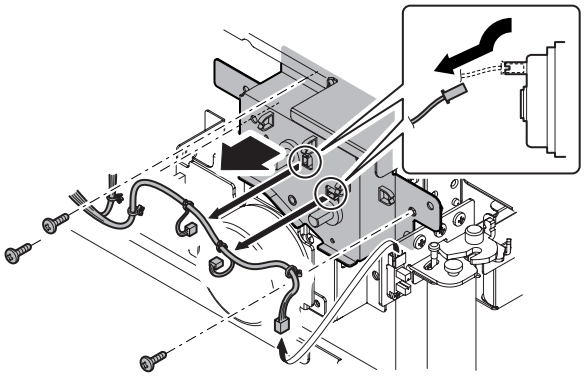


G. Clutch

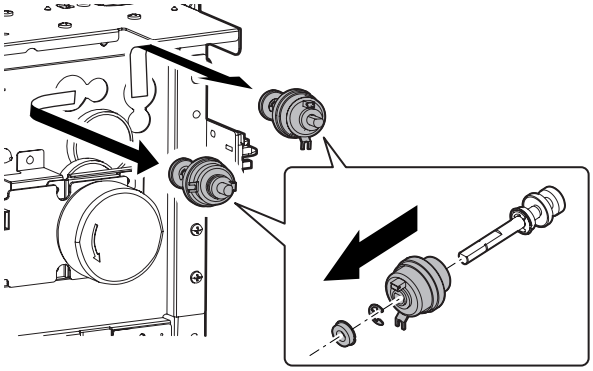
1) Remove the upper cabinet.
2) Remove the rear cabinet.
3) Remove the left rear cabinet.



4) Disconnect the connector, and remove the harness.
Remove the drive frame.



5) Remove the clutch unit.
Remove the E-ring, and remove the clutch.



[7] MAINTENANCE

1. Maintenance system table

× : Checking (clean, replace or adjust as required)　○ : Cleaning　▲ : Replace　△ : Adjust　☆ : Lubricate　□ : Position shift

No.	Part name	When calling	Main unit maintenance cycle	Remarks
1	Pick-up roller/each paper feed roller	×	○	As a rough guide, these rollers should be replaced when the LCC paper feed counter reaches a value of 100K (Sim22-9) or when one year has elapsed since the start of use.
2	Torque limiter	×	×	As a rough guide, the torque limiter should be replaced when the LCC paper feed counter reaches a value of 800K (Sim22-9).
3	Each transport rollers	×	○	
4	Each transport paper guides	○	○	
5	Each gears	×	×	
6	Each belts		×	
7	Each sensors	×	×	

[8] ADJUSTMENTS

Each adjustment item in the adjustment item list is indicated with its JOB number. Perform the adjustment procedures in the sequence of Job numbers from the smallest to the greatest.

However, there is no need to perform all the adjustment items. Perform only the necessary adjustments according to the need.

Unnecessary adjustments can be omitted. Even in this case, however, the sequence from the smallest to the greatest JOB number must be observed.

If the above precaution should be neglected, the adjustment would not complete normally or a trouble may occur.

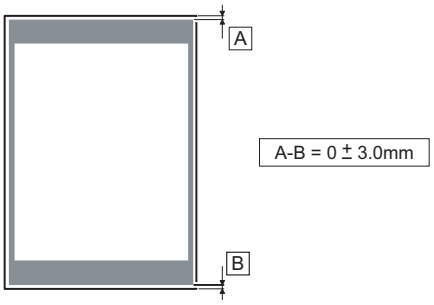
1. List

Job No.	Adjustment item list			Simulation to be used
ADJ 1	Print off-center adjustment			50-10
ADJ 2	Resist amount adjustment	ADJ 2A	Change in the resist amount adjustment/deflection amount correction value	51-02
		ADJ 2B	Adjustment of the print lead edge adjustment	50-05

2. Details

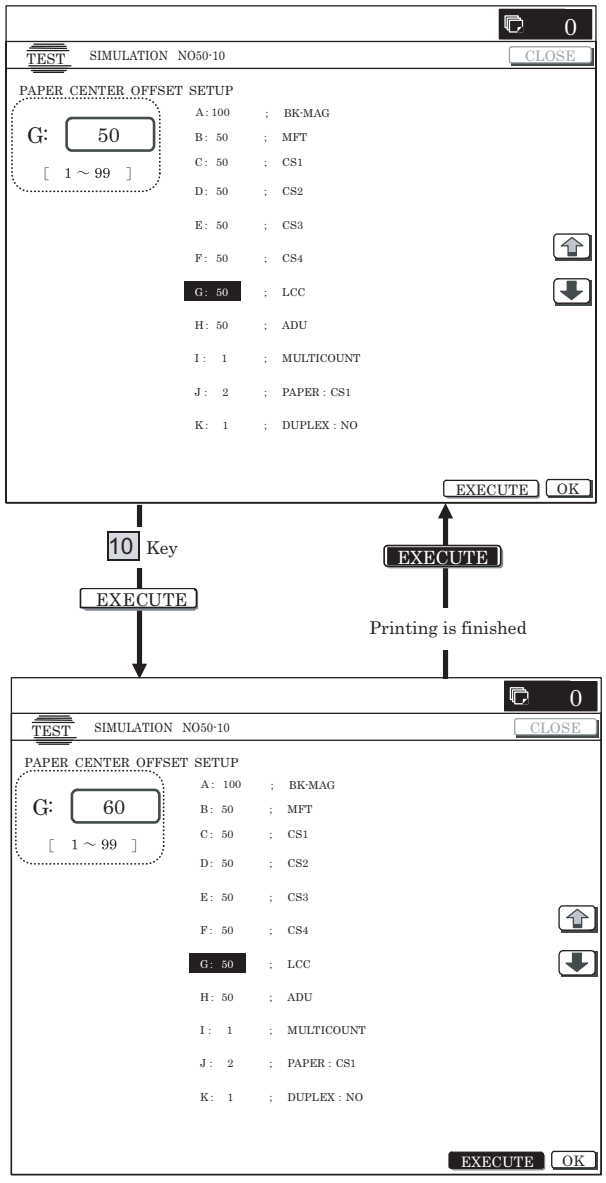
ADJ 1 Print off-center adjustment

1) Execute SIM.50-10 by the key operation of the machine. Then, the displays shown on the right side appear.
2) The print off-center adjustment value can be set for each tray.
3) Press the [↓] key on the touch panel to select “G:50:LCC”.
4) Then, enter your desired adjustment value with the [10] key.
   (Default: 50 Adjustment range: from 1 to 99)
   * If the adjustment value is decreased by 1, the main scanning print position is shifted to the front side by 0.1mm.
   * If the adjustment value is increased by 1, the main scanning print position is shifted to the rear side by 0.1mm.
5) When the [EXECUTE] button is pressed, the [EXECUTE] button is highlighted, currently set value is saved into the EEPROM and the RAM, and printing for adjustment pattern image is started. After printing is finished, the [EXECUTE] button returns to the normal display status.
6) Check the adjustment pattern image position.
   Measure the dimensions of the void area in the adjustment pattern front and rear frame directions, and ensure that they satisfy the conditions shown below.



   If condition of A - B = 0±3.0mm is satisfied, no adjustment is necessary.
   If it does not satisfy the condition above, execute the procedures shown below.
7) Change the adjustment value. Repeat the steps from 4) to 6) until the condition described in the step 6) is satisfied.
8) After the adjustment is finished, escape from the simulation mode with the reset key.

[Switching of screen]



<<Description of items>>

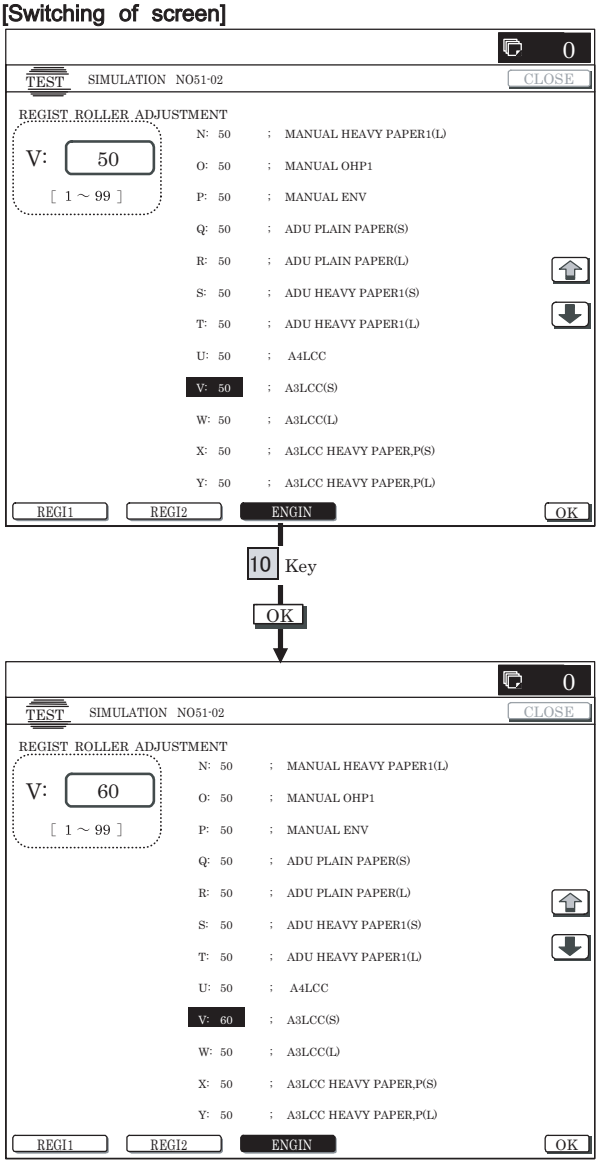
Item	Display item and details		Descriptions		Setting range		Default	Writing
A	BK-MAG		Main scanning print magnification BK		60 to 140		100	Yes
B	MFT		Print off-center adjustment value (manual)		1 to 99		50	Yes
C	CS1		Print off-center adjustment value (cassette 1)		1 to 99		50	Yes
D	CS2		Print off-center adjustment value (cassette 2)		1 to 99		50	Yes
E	CS3		Print off-center adjustment value (cassette 3)		1 to 99		50	Yes
F	CS4		Print off-center adjustment value (cassette 4)		1 to 99		50	Yes
G	LCC		Print off-center adjustment value (LCC)		1 to 99		50	Yes
H	ADU		Print off-center adjustment value (ADU)		1 to 99		50	Yes
I	MULTI COUNT		Number of printed sheets		1 to 999		1	No
J	PAPER	MFT	Cassette selection	Manual	1 to 6	1	2 (CS1)	No
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
K	DUPLEX	YES	Double sided print selection	Select	0 to 1	0	1(NO)	No
		NO		Not select		1		

ADJ 2 Resist amount adjustment

2-A Changing resist amount adjustment/ deflection amount correction value

1) Execute SIM.51-2 by the key operation of the machine. Then, the displays shown on the right side appear.
2) Select the [ENGIN] button.
3) Press the [↓] key on the touch panel to select “V:50:A3LCC (S)”.
4) Then, enter your desired adjustment value with the [10] key.
   (Default: 50 Ajustment range: from 1 to 99)
   * As the adjustment value is increased, the deflection amount is also increased. As the adjustment value is decreased, the deflection amount is also decreased.
   (If the adjustment value is changed by “1”, the stop timing is changed by 0.1mm (1.0msec).)
5) After the adjustment value is entered, press the [OK] key on the touch panel to save the set value.
6) After the adjustment is finished, escape from the simulation mode with the reset key.

[Switching of screen]



<<Setting range and defaults of set values>>

Item	Button	Item to be displayed	Descriptions (Mode, original, paper feeed speed)	Feed direction	Setup range	Default
A		TRAY1(S)	Host machine tray 1, deflection adjustment value (small size)	Not more than LT size	1 to 99	50
B		TRAY2(S)	Host machine tray 2, deflection adjustment value (small size)	Not more than LT size	1 to 99	50
C		TRAY3 PLAIN PAPER (S)	Host machine tray 3, deflection adjustment value (normal paper, small size)	Not more than LT size	1 to 99	50
D		TRAY3 PLAIN PAPER (L)	Host machine tray 3, deflection adjustment value (normal paper, large size)	Not less than LT size	1 to 99	50
E		TRAY3 HEAVY PAPER1 (S)	Host machine tray 3, deflection adjustment value (Cardboard 1, small size)	Not more than LT size	1 to 99	50
F		TRAY3 HEAVY PAPER1 (L)	Host machine tray 3, deflection adjustment value (Cardboard 1, large size)	Not less than LT size	1 to 99	50
G		TRAY4 PLAIN PAPER (S)	Host machine tray 4, deflection adjustment value (Normal paper, small size)	Not more than LT size	1 to 99	50
H		TRAY4 PLAIN PAPER (L)	Host machine tray 4, deflection adjustment value (Normal paper, large size)	Not less than LT size	1 to 99	50
I		TRAY4 HEAVY PAPER1 (S)	Host machine tray 4, deflection adjustment value (Cardboard 1, small size)	Not more than LT size	1 to 99	50
J		TRAY4 HEAVY PAPER1 (L)	Host machine tray 4, deflection adjustment value (Cardboard 1, large size)	Not less than LT size	1 to 99	50
K		MANUAL PLAIN PAPER (S)	Manual tray, deflection adjustment value (Normal paper, small size)	Not more than LT size	1 to 99	50
L		MANUAL PLAIN PAPER (L)	Manual tray, deflection adjustment value (Normal paper, large size)	Not less than LT size	1 to 99	50
M		MANUAL HEAVY PAPER1 (S)	Manual tray, deflection adjustment value (Cardboard1, small size)	Not more than LT size	1 to 99	50
N		MANUAL HEAVY PAPER1 (L)	Manual tray, deflection adjustment value (Cardboard1, large size)	Not less than LT size	1 to 99	50
O		MANUAL OHP1	Manual tray, deflection adjustment value (OHP1)		1 to 99	50
P		MANUAL ENV	Manual tray, deflection adjustment value (Envelope)		1 to 99	50
Q		ADU PLAIN PAPER (S)	ADU, deflection adjustment value (normal paper, small size)	Not more than LT size	1 to 99	50
R		ADU PLAIN PAPER (L)	ADU, deflection adjustment value (normal paper, large size)	Not less than LT size	1 to 99	50
S		ADU HEAVY PAPER1 (S)	ADU, deflection adjustment value (Cardboard1, small size)	Not more than LT size	1 to 99	50
T		ADU HEAVY PAPER1 (L)	ADU, deflection adjustment value (Cardboard1, large size)	Not less than LT size	1 to 99	50
U		A4LCC	A4LCC, deflection adjustment value		1 to 99	50
V	ENGIN	A3LCC (S)	A3LCC deflection adjustment value (Normal paper, small size)	Not more than LT size	1 to 99	50
W		A3LCC (L)	A3LCC deflection adjustment value (Normal paper, large size)	Not less than LT size	1 to 99	50
X		A3LCC HEAVY PAPER1 (S)	A3LCC deflection adjustment value (Cardboard, small size)	Not more than LT size	1 to 99	50
Y		A3LCC HEAVY PAPER1 (L)	A3LCC deflection adjustment value (Cardboard, large size)	Not more than LT size	1 to 99	50

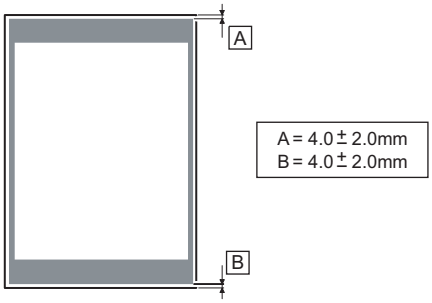
<Notation of (Large size), (Small size)>

(Small size): Length of paper in the feeding direction is not more than LT size (216mm).

(Large size): Length of paper in the feeding direction exceeds LT size (216mm).

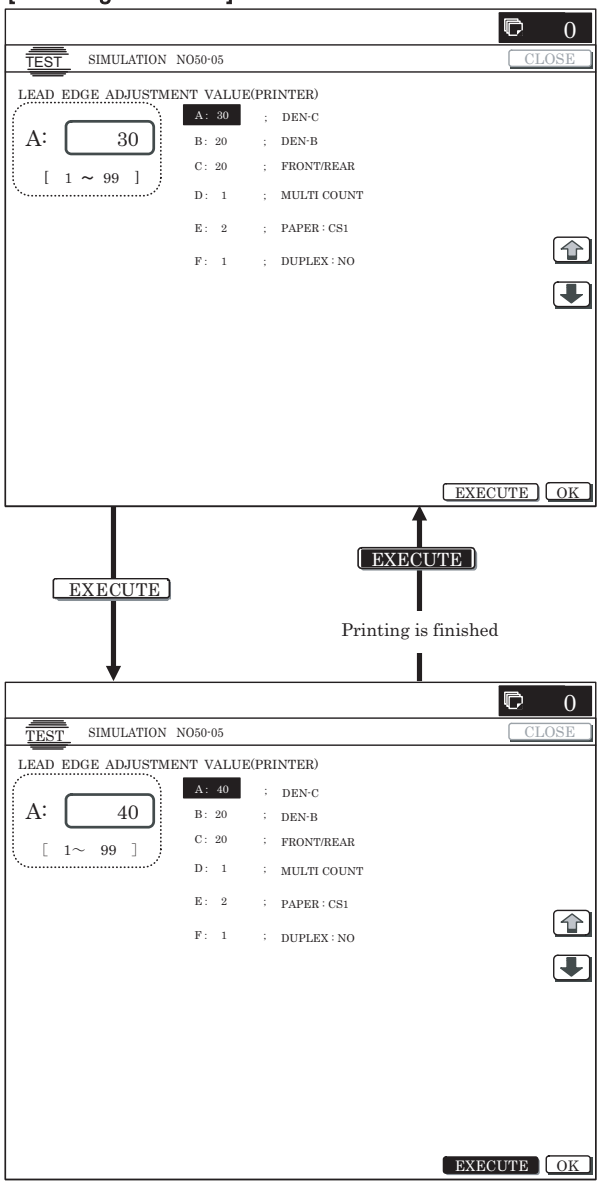
2-B Print lead edge adjustment

1) Execute SIM.50-5 by the key operation of the machine. Then, the displays shown on the right side appear.
2) Press the [↓] key on the touch panel to select “E:PAPER”.
3) Then, enter the adjustment value 6 with the [10] key, and press the [OK] button.
   (Adjustment value 6: LCC)
4) When the [EXECUTE] button is pressed, the [EXECUTE] button is highlighted, and printing for adjustment pattern image is started with the currently set value. After printing is finished, the [EXECUTE] button returns to the normal display status.
5) Check the adjustment pattern image position.
   Measure the dimensions of the void area in the adjustment pattern right and left frame directions, and ensure that they satisfy the conditions shown below.



   If condition of A=4.0±2.0mm, B=4.0±2.0mm is satisfied, no adjustment is necessary.
   If it does not satisfy the condition above, execute the procedures shown below.
6) Change the adjustment values of the adjustment items A(DEN-C) and B(DEN-B).
   * As the adjustment value of the item A(DEN-C) is decreased by 1, the print start position is moved to the lead edge side of paper against the paper feed direction by 0.1mm.
   * As the adjustment value of the item B(DEN-B) is decreased by 1, the print range is increased to the trailing edge side of paper against the paper feed direction by 0.1mm.
7) Repeat the steps from 4) to 6) until the condition shown in the step 5) is satisfied.
8) After the adjustment is finished, escape from the simulation mode with the reset key.

[Switching of screen]



<Description of items>

Item	Display items and details		Descriptions		Setup range		Default	Writing	Remarks
A	DEN-C		Print lead edge adjustment		1 to 99		30	Yes	Adjustment value for matching to the print lead edge for printer. As the adjustment value of this item is decreased by 1, the print start position against the paper feeding direction is moved to the leading edge side by 0.1mm.
B	DEN-B		Sub scanning direction print area adjustment		1 to 99		20	Yes	Amount of void to be created at the trailing edge of paper. As the adjustment value of the item B(DEN-B) is decreased by 1, the sub scanning print range adjustment value is decreased by 0.1mm.
C	FRONT/REAR		FRONT/REAR void amount adjustment		1 to 99		20	Yes	Amount of void to be created at the right and left edges of paper. As the value is increased, the void amount is increased.
D	MULTI COUNT		Number of printed sheets		1 to 999		1	No	
E	PAPER	MFT	Cassette selection	Manual 1	1 to 6	1	2 (CS1)	No	
		CS1		Cassette 1		2			
		CS2		Cassette 2		3			
		CS3		Cassette 3		4			
		CS4		Cassette 4		5			
		LCC		LCC		6			
F	DUPLEX	YES	Double-sided print selection	Selected	0 to 1	0	1 (NO)	No	
		NO		Not selected		1			

* The item name for the items J and K is detailed display.
Example: PAPER: CS1

[9] SIMULATION

1. List

Code		Function (purpose)	Purpose	Section
Main	Sub			
4	2	Used to check the operations of the sensors and detectors in the large capacity tray (LCC) and the control circuit.	Operation test/Check	Large capacity tray (LCC)
	3	Used to check the operations of the loads in the large capacity tray (LCC) and the control circuit.	Operation test/Check	Large capacity tray (LCC)
	5	Used to check the operations of the clutch (LTRC) in the LCC and the monitor.	Operation test/Check	Large capacity tray (LCC)
15	-	Used to cancel the self-diag "U6-09 (large capacity paper feed tray)" trouble.	Clear/cancel (Trouble etc.)	LCC

2. Details of trouble code

4

4-2

Purpose: Operation test/Check

Function (Purpose): Used to check the operations of the sensors and detectors in the large capacity tray (LCC) and the control circuit.

Section: Large capacity tray (LCC)

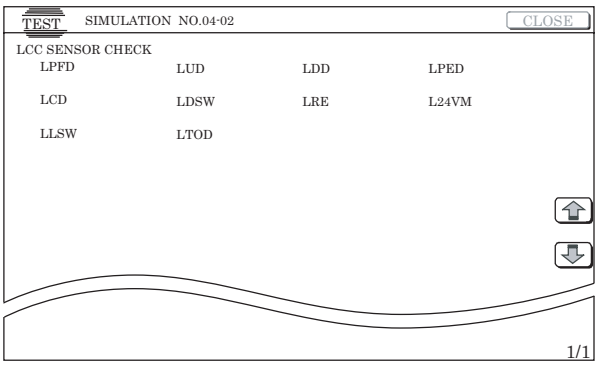
Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

Sensors and detectors which are turned on are highlighted.

<MX-LCX3>

LPFD	LCC transport sensor
LUD	LCC tray upper limit detection
LDD	LCC tray lower limit detection
LPED	LCC tray paper empty detection
LCD	LCC tray insertion detection
LDSW	LCC upper open/close detection SW
LRE	LCC lift motor encoder detection
L24VM	LCC 24V power monitor
LLSW	LCC upper limit SW
LPUSW	LCC paper upper surface detection SW
LRRSW	LCC reverse winding detection SW
LTLSW	LCC tray lift SW
LTLD	LCC tray lock sensor
LIPSW	LCC illegal paper detection SW
LTOD	LCC main unit connection sensor



4-3

Purpose: Operation test/Check

Function (Purpose): Used to check the operations of the loads in the large capacity tray (LCC) and the control circuit.

Section: Large capacity tray (LCC)

Operation/Procedure

1) Select a target of the operation check with the touch panel.

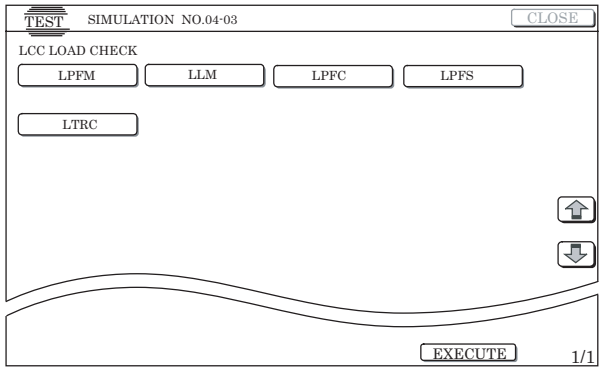
2) Press [EXECUTE] key.

The selected load is operated.

When [EXECUTE] is pressed, the operation is stopped.

MX-LCX3

LPFM	LCC transport motor
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch
LTLED	LCC tray LED lamp
LTLC	LCC tray lock clutch
LFAN	LCC separation auxiliary fan



4-5

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the clutch (LTRC) in the LCC and the monitor.
Section	Large capacity tray (LCC)

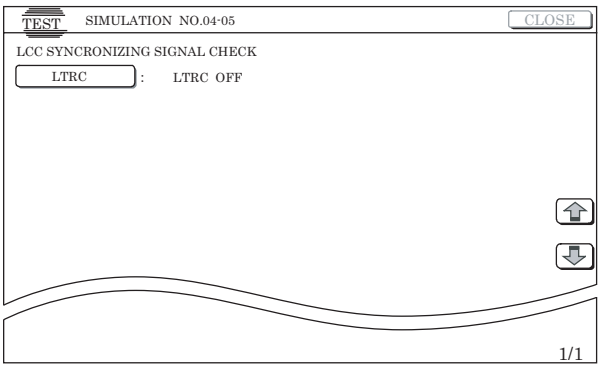
Operation/Procedure

1) Press LTRC key to check the sync signal.

When normal: ON When abnormal: OFF

2) Press the highlighted LTRC key to check the sync signal.

When normal: OFF When abnormal: ON



15

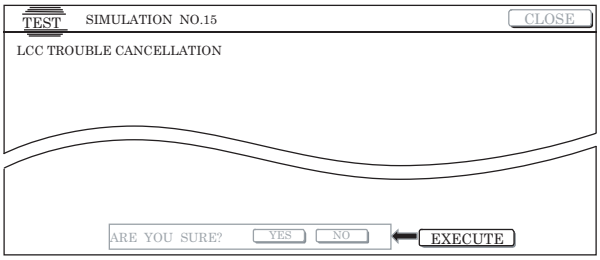
15--

Purpose	Clear/cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U6-09 F3-12, F3-22(large capacity paper feed tray, paper feed tray1, 2)" trouble.
Section	LCC

Operation/Procedure

1) Press [EXECUTE] key.

2) Press [YES] key to execute cancellation of the trouble.



[10] SELF DIAG MESSAGE AND TROUBLE CODE

1. Self diag

A. General

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section or notifies to the user or the serviceman by voice messages. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

B. Function and purpose

1) Securing safety. (The machine is stopped on detection of a trouble.)
2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

C. Self diag message kinds

The self diag messages are classified as shown in the table below.

Class 1	User	Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)
	Serviceman	Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.)
	Other	—
Class 2	Warning	Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.)
	Trouble	Warning of a machine trouble. The machine is stopped.
	Other	—

D. Self diag operation

(1) Self diag operation

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

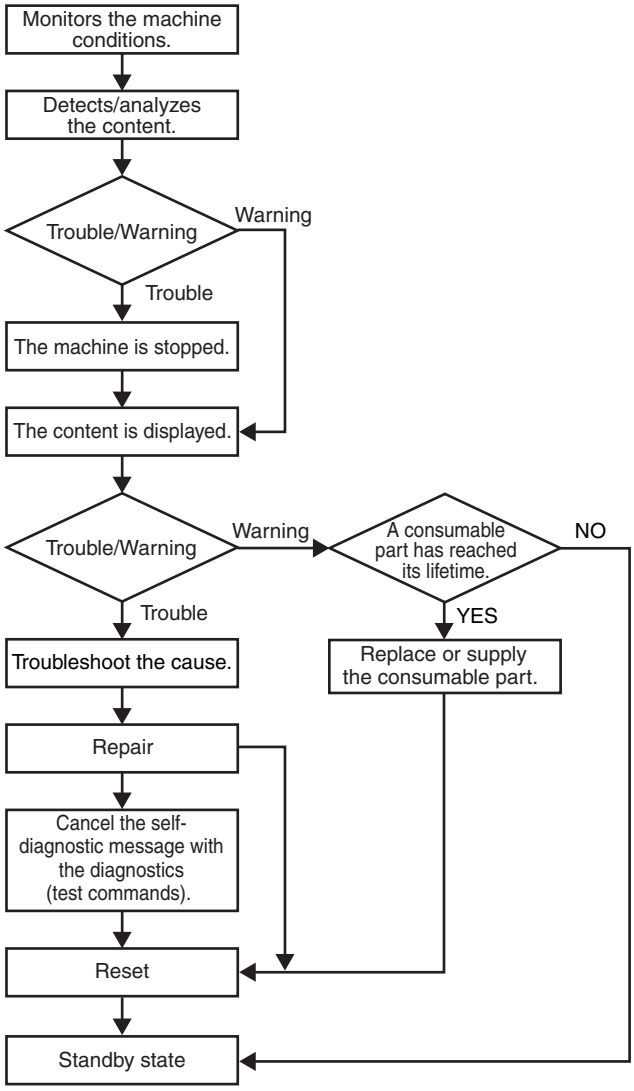
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.



2. Trouble code list

MAIN CODE	SUB CODE	Title (Content)	Section	Operation mode	Countermeasure (Remedy)	Note
U6	09	Lift motor trouble	LCC	When the tray is working	Check connection.	
	20	Communication trouble	LCC	LCC communication	Turn OFF/ON the power.	
	21	Transport motor trouble	LCC	Paper feed	Check connection.	
	22	24V trouble	LCC	Power ON	Check connection.	
	23	Tray descending trouble	LCC	When the tray is working	Check connection.	
	24	Tray lock trouble	LCC	When the tray is working	Check connection.	
	51	LCC incompatibility trouble	LCC	Power ON	Check connection.	

3. Trouble code details

U6-09 LCC lift motor trouble

Trouble content		• The encoder input value is not changed in 0.2sec (1st time)/0.5sec (2nd time and later) after rotation of the motor. • The motor is rotated for 48sec or more.
Section		PCU
Case 1	Cause	Sensor trouble, LCC control PWB trouble, gear breakage, lift motor trouble
	Check and Remedy	Use SIM4-2 and 4-3 to check the operation of the sensor and the lift motor. Use SIM15 to cancel the trouble.

U6-20 LCC communication trouble

Trouble content		LCC communication error. Communication line test error after turning ON the power or canceling the exclusive simulation. LCC and machine model codes discrepancy error
Section		PCU
Case 1	Cause	Connector and harness connection trouble or disconnection, LCC control PWB trouble, control (PCU) PWB trouble, malfunction due to electrical noises
	Check and Remedy	Turn OFF/ON the power to cancel the trouble. Check the connector and the harness of the communication line.

U6-21 LCC transport motor trouble

Trouble content		After passing 1 sec from turning ON the motor, the lock state of the motor lock signal is detected continuously for 1 sec.
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, an overcurrent to the motor, LCC control PWB trouble
	Check and Remedy	Use SIM4-3 to check the operation of the transport motor.

U6-22 LCC 24V power abnormality

Trouble content		DC24V power is not supplied to LCC.
Section		PCU
Case 1	Cause	Connector and harness connection trouble or disconnection, LCC control PWB trouble, power unit trouble
	Check and Remedy	Check the connector and the harness of the power line. Check that the power unit and the LCC control PWB is of 24V.

U6-23 LCC tray descending trouble (reverse winding detection)

Trouble content		Reverse winding of the LCC tray wire is detected.
Section		PCU
Case 1	Cause	Reverse winding of the wire
	Check and Remedy	Check the wire.
Case 2	Cause	Connector and harness connection trouble
	Check and Remedy	Check connection of the connector and the harness.
Case 3	Cause	Reverse winding detection SW-ON, reverse winding detection SW trouble, LCC control PWB trouble
	Check and Remedy	Replace the reverse winding SW and the LCC control PWB.

U6-24 LCC tray lock detection trouble

Trouble content		Malfunction of the LCC tray lock mechanism is detected.
Section		PCU
Case 1	Cause	Tray lock mechanism trouble
	Check and Remedy	Check the tray lock mechanism.
Case 2	Cause	Connector and harness connection trouble
	Check and Remedy	Check connection of the connector and the harness.
Case 3	Cause	Tray lock detection sensor trouble, LCC control PWB trouble
	Check and Remedy	Replace the tray lock detection sensor and the LCC control PWB.

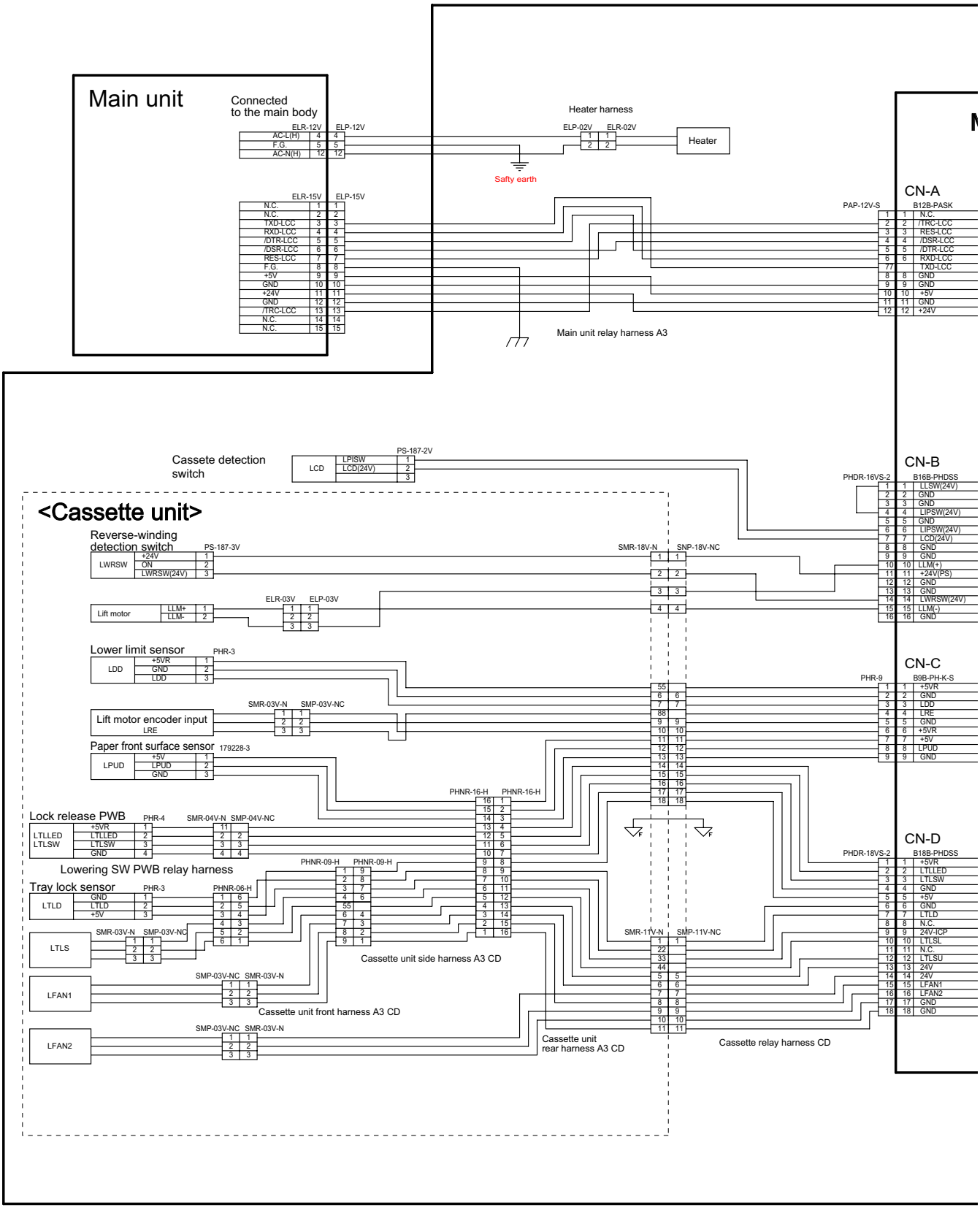
U6-51 LCC incompatibility trouble

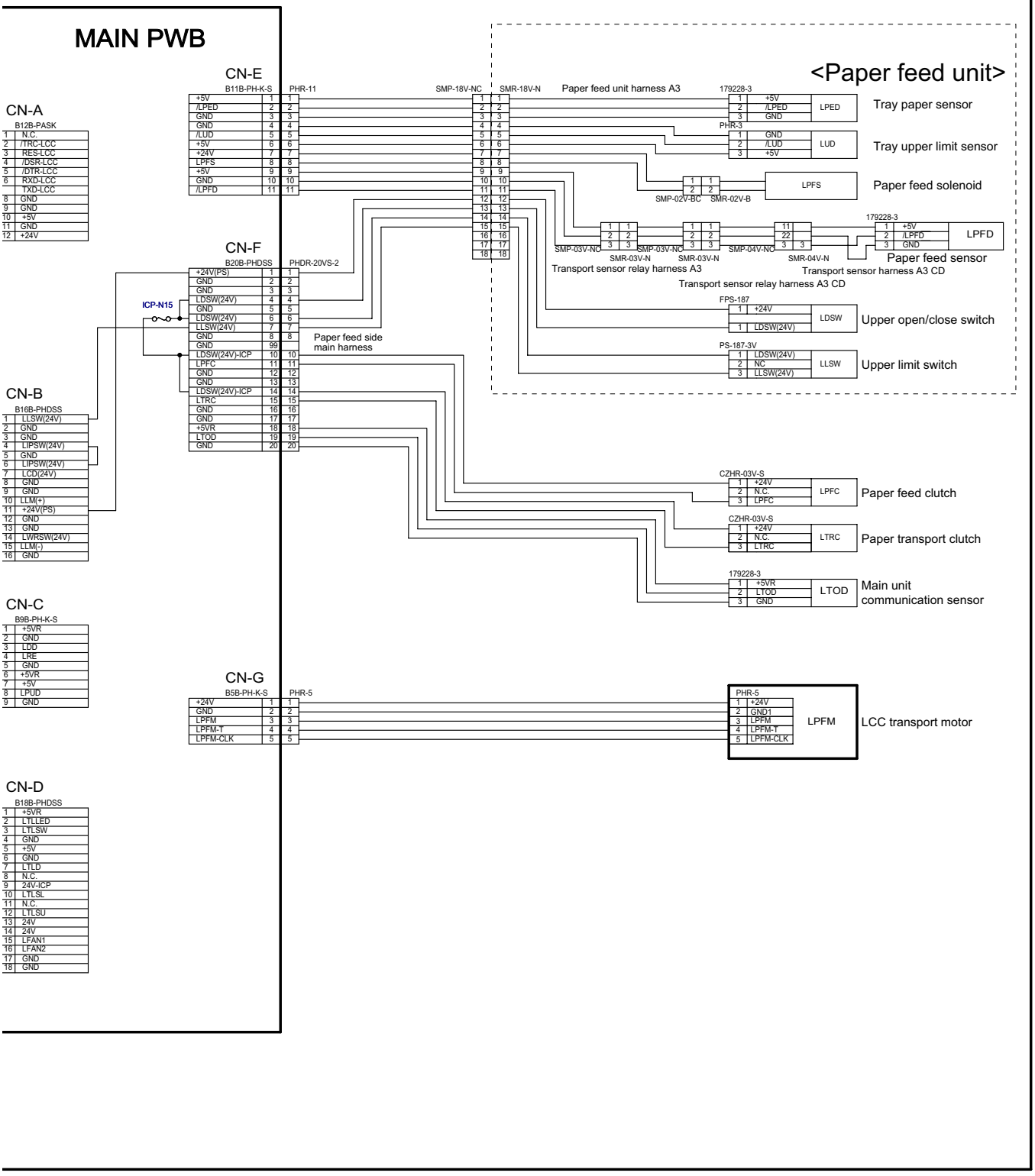
Trouble content		Detection of LCC connection which is incompatible with the MX-5500N/6200N/7000N series.
Section		PCU
Case 1	Cause	Connection of the LCC, which is incompatible with the MX-5500N/6200N/7000N series is detected.
	Check and Remedy	Connect the MX-LCX3.

M E M O

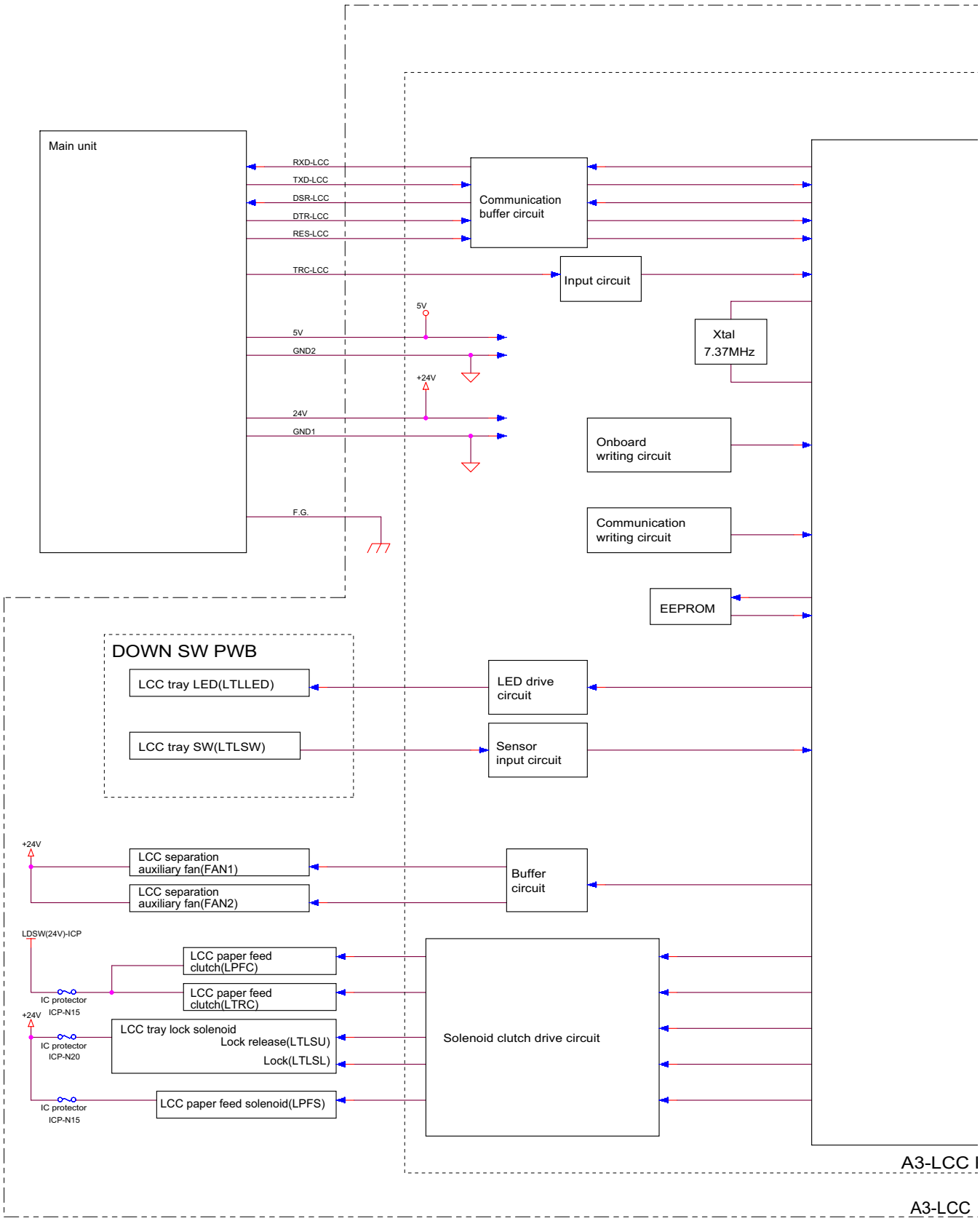
[11] ELECTRICAL SECTION

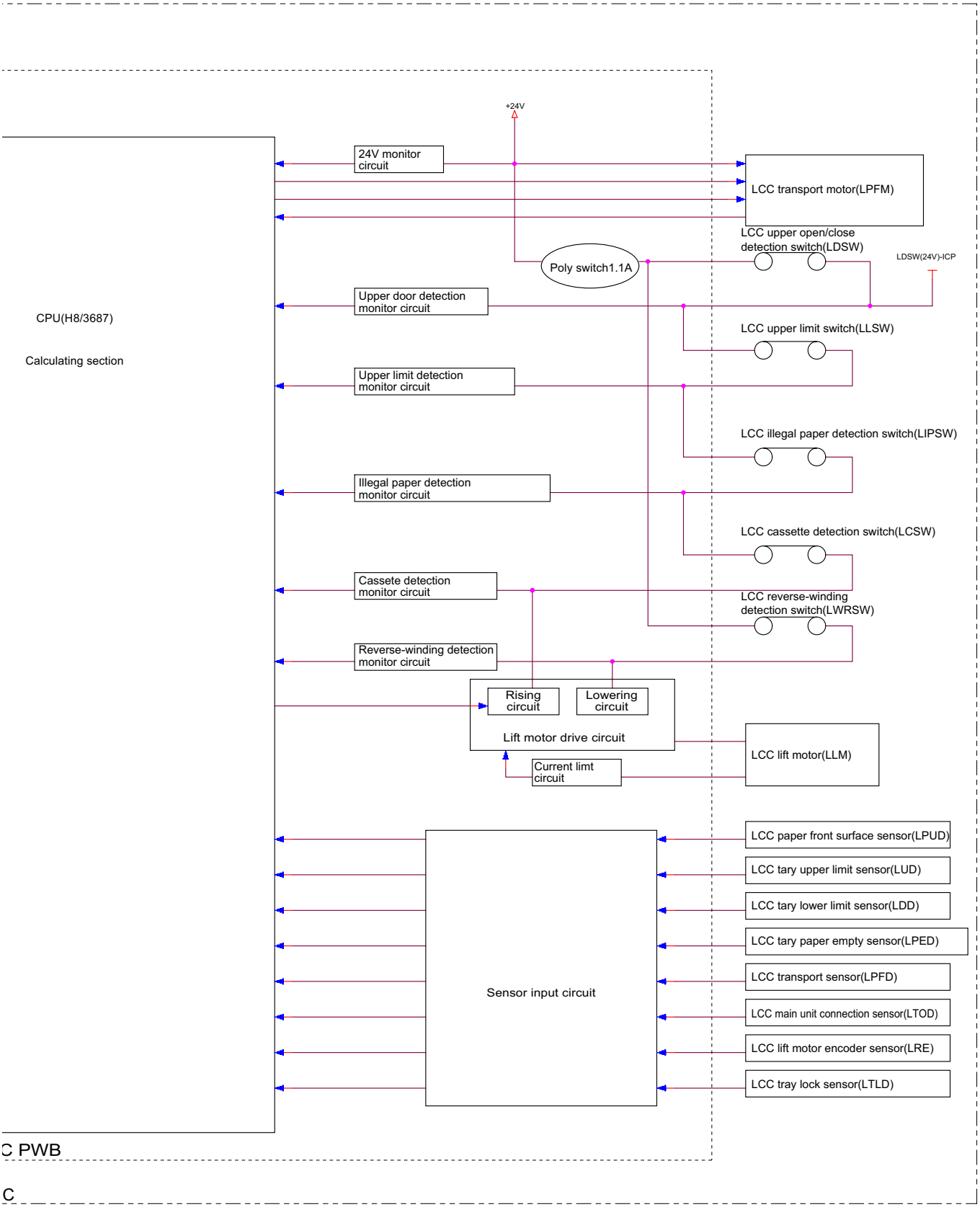
1. Wiring diagram



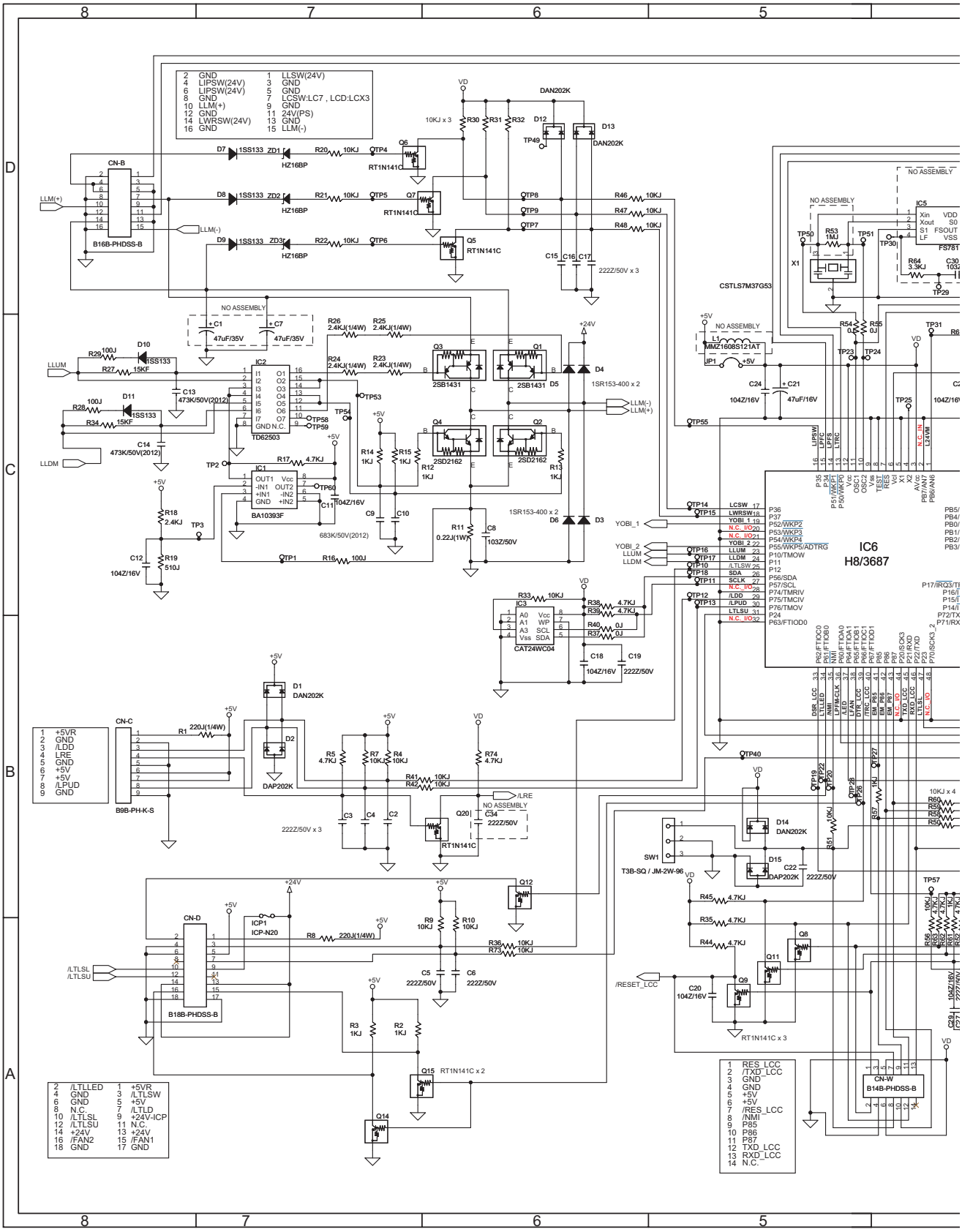

MAIN PWB
CN-A
B12B-PASK
1 N.C.
2 /TRC-LCC
3 RES-LCC
4 /DSR-LCC
5 /DTR-LCC
6 RXD-LCC
TXD-LCC
8 GND
9 GND
10 +5V
11 GND
12 +24V
CN-B
B16B-PHDSS
1 LLSW(24V)
2 GND
3 GND
4 LIPSW(24V)
5 GND
6 LIPSW(24V)
7 LCD(24V)
8 GND
9 GND
10 LLM(+)
11 +24V(PS)
12 GND
13 GND
14 LWRSW(24V)
15 LLM(-)
16 GND
CN-C
B9B-PH-K-S
1 +5VR
2 GND
3 LDD
4 LRE
5 GND
6 +5VR
7 +5V
8 LPUD
9 GND
CN-D
B18B-PHDSS
1 +5VR
2 LTLLED
3 LTLSW
4 GND
5 +5V
6 GND
7 LTLD
8 N.C.
9 24V-ICP
10 LTLSL
11 N.C.
12 LTLSU
13 24V
14 24V
15 LFAN1
16 LFAN2
17 GND
18 GND
CN-E
B11B-PH-K-S
PHR-11
+5V 1 1
/LPED 2 2
GND 3 3
GND 4 4
/LUD 5 5
+5V 6 6
+24V 7 7
LPFS 8 8
+5V 9 9
GND 10 10
/LPFD 11 11
SMP-18V-NC
SMR-18V-N
Paper feed unit harness A3
CN-F
B20B-PHDSS
PHDR-20VS-2
+24V(PS) 1 1
GND 2 2
GND 3 3
LDSW(24V) 4 4
GND 5 5
LDSW(24V) 6 6
LLSW(24V) 7 7
GND 8 8
GND 99
LDSW(24V)-ICP 10 10
LPFC 11 11
GND 12 12
GND 13 13
LDSW(24V)-ICP 14 14
LTRC 15 15
GND 16 16
GND 17 17
+5VR 18 18
LTOD 19 19
GND 20 20
ICP-N15
Paper feed side main harness
CN-G
B5B-PH-K-S
PHR-5
+24V 1 1
GND 2 2
LPFM 3 3
LPFM-T 4 4
LPFM-CLK 5 5
<Paper feed unit>
179228-3
1 +5V
2 /LPED
3 GND
LPED
Tray paper sensor
PHR-3
1 GND
2 /LUD
3 +5V
LUD
Tray upper limit sensor
SMP-02V-BC
SMR-02V-B
LPFS
Paper feed solenoid
SMP-03V-NC
SMR-03V-N
SMP-04V-NC
SMR-04V-N
Transport sensor relay harness A3
Transport sensor relay harness A3 CD
179228-3
1 +5V
2 /LPFD
3 GND
LPFD
Paper feed sensor
Transport sensor harness A3 CD
FPS-187
1 +24V
1 LDSW(24V)
LDSW
Upper open/close switch
PS-187-3V
1 LDSW(24V)
2 NC
3 LLSW(24V)
LLSW
Upper limit switch
CZHR-03V-S
1 +24V
2 N.C.
3 LPFC
LPFC
Paper feed clutch
CZHR-03V-S
1 +24V
2 N.C.
3 LTRC
LTRC
Paper transport clutch
179228-3
1 +5VR
2 LTOD
3 GND
LTOD
Main unit communication sensor
PHR-5
1 +24V
2 GND1
3 LPFM
4 LPFM-T
5 LPFM-CLK
LPFM
LCC transport motor

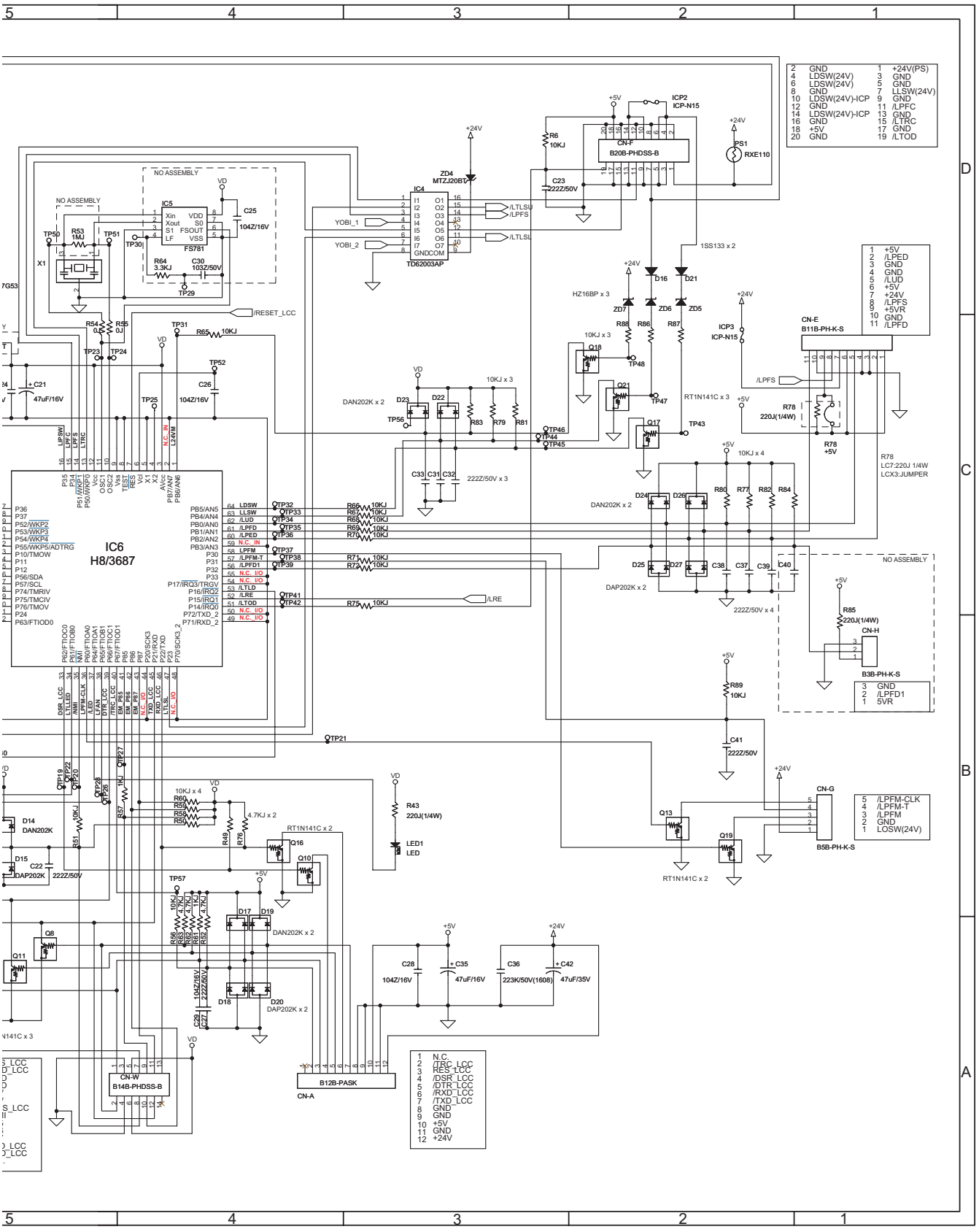
2. Block diagram




+24V
24V monitor circuit
LCC transport motor(LPFM)
LCC upper open/close detection switch(LDSW)
LDSW(24V)-ICP
Poly switch1.1A
CPU(H8/3687)
Calculating section
Upper door detection monitor circuit
LCC upper limit switch(LLSW)
Upper limit detection monitor circuit
LCC illegal paper detection switch(LIPSW)
Illegal paper detection monitor circuit
LCC cassette detection switch(LCSW)
Cassete detection monitor circuit
LCC reverse-winding detection switch(LWRSW)
Reverse-winding detection monitor circuit
Rising circuit
Lowering circuit
Lift motor drive circuit
LCC lift motor(LLM)
Current limt circuit
LCC paper front surface sensor(LPUD)
LCC tary upper limit sensor(LUD)
LCC tary lower limit sensor(LDD)
LCC tary paper empty sensor(LPED)
LCC transport sensor(LPFD)
Sensor input circuit
LCC main unit connection sensor(LTOD)
LCC lift motor encoder sensor(LRE)
LCC tray lock sensor(LTLD)
C PWB
C

3. Circuit diagram

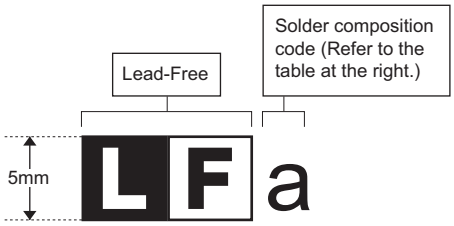



IC6
H8/3687
IC5
FS781
IC4
TD62003AP
ZD4
MTZJ20BT
ICP2
ICP-N15
CN-F
B20B-PHDSS-B
PS1
RXE110
ICP3
CN-E
B11B-PH-K-S
CN-H
B3B-PH-K-S
CN-G
B5B-PH-K-S
CN-W
B14B-PHDSS-B
CN-A
B12B-PASK
NO ASSEMBLY
/RESET_LCC
/LTLSU
/LPFS
/LTLSL
/LRE
YOBI_1
YOBI_2
DAN202K x 2
DAP202K x 2
RT1N141C x 2
RT1N141C x 3
1SS133 x 2
HZ16BP x 3
10KJ x 3
10KJ x 4
4.7KJ x 2
222Z/50V x 3
222Z/50V x 4
R6 10KJ
C23 222Z/50V
R53 1MJ
R64 3.3KJ
C30 103Z/50V
C25 104Z/16V
R54 0J
R55 0J
R65 10KJ
C21 47uF/16V
C26 104Z/16V
R78 220J(1/4W)
R85 220J(1/4W)
R89 10KJ
C41 222Z/50V
R43 220J(1/4W)
LED1 LED
C28 104Z/16V
C35 47uF/16V
C36 223K/50V(1608)
C42 47uF/35V
R78 LC7:220J 1/4W LCX3:JUMPER
+5V
+24V
VD
1 +5V(PS)
2 GND
3 GND
4 LDSW(24V)
5 GND
6 LDSW(24V)
7 LLSW(24V)
8 GND
9 GND
10 LDSW(24V)-ICP
11 /LPFC
12 GND
13 GND
14 LDSW(24V)-ICP
15 /LTRC
16 GND
17 GND
18 +5V
19 /LTOD
20 GND
1 +5V
2 /LPED
3 GND
4 GND
5 /LUD
6 +5V
7 +24V
8 /LPFS
9 +5VR
10 GND
11 /LPFD
5 /LPFM-CLK
4 /LPFM-T
3 /LPFM
2 GND
1 LOSW(24V)
3 GND
2 /LPFD1
1 5VR
1 N.C.
2 /TRC_LCC
3 RES_LCC
4 /DSR_LCC
5 /DTR_LCC
6 /RXD_LCC
7 /TXD_LCC
8 GND
9 GND
10 +5V
11 GND
12 +24V

LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder.
The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommendable.

(2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

* Applicable to battery-operated equipment

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)
"BATTERY DISPOSAL"
THIS PRODUCT CONTAINS A LITHIUM PRIMARY
(MANGANESS DIOXIDE) MEMORY BACK-UP BATTERY
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE
BATTERY FROM THE PRODUCT AND CONTACT YOUR
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE)
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE
AGENCE ENVIRONNEMENTALE LOCALE POUR DES
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET
DE TRAITEMENT.

* Applicable to battery-operated equipment

SHARP

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